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G. Stanley Hall

To-day the readers of the Pedagogical Seminary, the members of Clark University and its alumni, and teachers and psychologists the world over, mourn the passing of G. Stanley Hall, on April 24, 1924, in the seventy-ninth year of his life.

Of his many contributions probably the most significant in its widely extended influence, is the emphasis he placed on the genetic point of view and the genetic method. This method in scientific study and in its practical application has been represented by the Pedagogical Seminary since its founding by Dr. Hall in 1891.

With Dr. Hall himself this was a general rather than a special method and was controlled by the results of other methods, especially the experimental method and the study of behavior. With him it meant the synthesis from the genetic point of view of a vast number of facts collected from every related field.

In his mental vision he had the normal hyperopia of childhood, and this never declined into the presbyopia of advancing years. To the ordinary mind the sweep of his intellectual vision appeared stupendous. He was not only the genetic interpreter of the past, but the inspiring prophet of the distant future. Himself a bold adventurer in new fields of science and education, he afforded his disciples the stimulus of horizon-breaking experiences as stimulating and exhilarating as they

were unusual and oftentimes surprising. On his intellectual excursions, to the student who had ears came echoes from the far distant past, and to one who had eyes as well, prophetic glimpses of a far distant future. On the one hand atavistic reverberations of pre-human stages of development, a sort of psychological paleontology; and on the other, visions of a far off millenial pedagogy, whose goal was the development of some super-man, whose symbol, the child at play; withal a genetic pedagogy that recounted long forgotten secrets about oneself and the human race, and golden prophecies of some great Utopian state of brotherly love, happiness and freedom.

As an instrument of scientific study, the genetic method means the study of things in their genesis and in their wider causal relations; but in the hands of Dr. Hall this method meant far more than this—a vital psychology and the core of a personal faith as well as the fundamental principle at the heart of both educational research and pedagogical practice. The focal point of all this genetic development for him lay in the period of human adolescence. This was the starting point, and the center, and the essential nucleus for all the great forces which make development possible.

A superior mental hygienist, Dr. Hall always attempted to face reality; and thus he noted the alarming conditions in education and society that make so many students pessimistic to-day; and so in his masterly "Fall of Atlantis" and some of his other writings he may appear as a pessimist himself; but on the other hand, as in one of the very last articles he wrote, "Can the Masses Rule the World?" he presents what to many appears a surprising optimism.

The ground for this optimism was his faith in adolescence, his belief in the strength, the wholesomeness and soundness of youth. In a disintegrating, katabolic stage of world civilization, when in the light of new facts and new demands, old conventions and old teachers

are often discredited, he believed the strength and sanity of youth would make the necessary readjustment and produce a new, a better, and a higher development. Thus, while to the student to-day, who naturally prides himself on facing the facts and taking a pessimistic attitude, his optimism may appear strange; it is not strange that he was the champion and prophet of youth the world over and an ardent student of the youth movement. Again, if I understand him rightly, his optimism in general was grounded in his psychology; thus when old and fundamental doctrines and beliefs appeared shaken, he still believed they were essentially true, or else something better symbolized by them.

An excellent example of the genetic point of view in the field of human belief is given by the article in the present issue on "The Virgin Birth."

From the first the Pedagogical Seminary has been primarily the exponent of genetic pedagogy and genetic psychology. It will continue to represent this point of view.

WILLIAM H. BURNHAM.

PSYCHOLOGICAL EXAMINATION OF PRE-SCHOOL AGE CHILDREN

A DEMONSTRATION OF THE CLASSIFICATION OF CHILDREN ACCORDING TO ABILITY*

By David Mitchell

During the year 1922 the New York State Association of Consulting Psychologists, with the cooperation of the Board of Education, made psychological examinations of the children entering three public schools. The work had been begun the year previous in eight different schools, at which time there had been examined more than a thousand children. During the year 1922 the work was limited to three schools, and Table 1 shows the number of children in each of them.

Table 1

Number of Children Examined

Schools	*No. of Children*
39	780
102	425
110	799
Total	2004

The purpose of the examinations was the classification of children according to ability. To determine their ability the Stanford Revision of the Binet-Simon Tests was used. Wherever time permitted the complete scale was used in the expectation that the complete scale would give a more accurate rating. Under pressure, when each psychologist had to examine fifteen children in five hours, the abbreviated scale, as recommended by Terman, was used.

The intelligence quotients, as determined by this method of examination, are shown in Table 2. The first column in this table gives the intelligence quotients in ranges of 5, from 45 to 140 and above. The next three columns show the distribution in the three schools, and the final column gives the total.

*This demonstration, carried on by the New York State Association of Consulting Psychologists, was made possible through a contribution from the Commonwealth Fund.

TABLE 2

INTELLIGENCE QUOTIENTS—PUBLIC SCHOOLS 39, 102, 110
January to December, 1922

	39	*102*	*110*	*Totals*
45– 49	5	—	4	9
50– 54	5	5	6	16
55– 59	7	5	5	17
60– 64	18	14	19	51
65– 69	27	14	22	63
70– 74	51	32	48	131
75– 79	74	37	72	183
80– 84	98	46	78	220
85– 89	111	51	99	261
90– 94	124	63	126	313
95– 99	91	44	94	229
100–104	74	61	114	249
105–109	35	28	63	126
110–114	31	18	23	72
115–119	17	4	14	35
120–124	11	2	6	19
125–129	—	—	4	4
130–134	1	1	—	2
135–139	1	—	—	1
140 and up	1	—	2	3
TOTALS	780	425	799	2004

Graphically these results are shown in Chart I. The dotted line in this chart shows the distribution for Public School 102, the whole line the distribution for Public School 39, and the broken line refers to Public School 110. It is easily seen that the range in the three schools is almost identical, and the chief difference in the curves is made by the varying number of children in the schools.

There is, however, a slight difference in these children, which is shown in Table 3, giving the quartiles for the three schools.

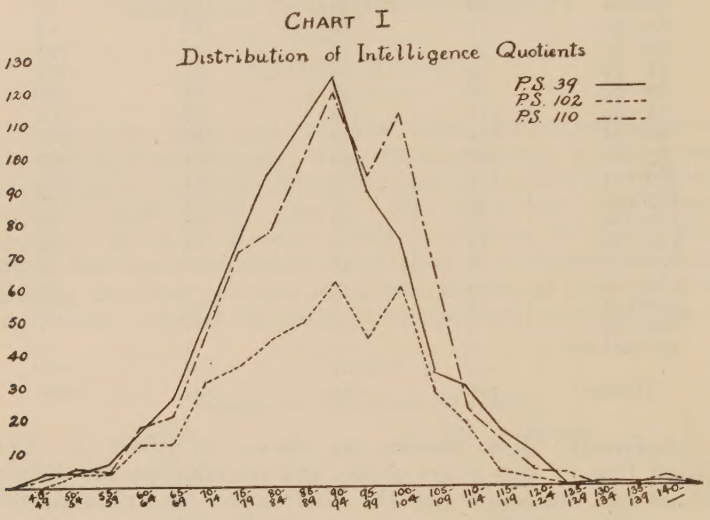
TABLE 3

QUARTILE DISTRIBUTION OF CHILDREN

Quartiles	*39*	*102*	*110*
Lower	80	79	81
Median	89	90	92
Upper	98	100	101

The outstanding fact in this table is the median score of the children. For the three schools it is 89, 90, and 92. The median score for the general run of the population has been supposed to be exactly 100. As a matter of fact, approximate-

ly 75 percent of our children make scores of less than 100. In the three schools, 75 percent make not more than 98, 100, and 101, respectively. Twenty-five percent of our children have intelligence quotients of 80 or less. The original classification said that all children of 70 or less were definitely feebleminded. In this group of children 156, or approximately



8 percent, had intelligence quotients of 69 or less. While it is true that these children are unable to do the school work as they are expected to do it, there is no doubt but that a large number of them will be socially competent and therefore not classed as feebleminded.

The reason for the lower standard for the children in these schools is twofold. First, there is but little doubt of the native lack of capacity. Studies have shown that intelligence varies with social status. These children were from families whose occupations were mostly mechanical or general labor. Second, a not unimportant but certainly incomplete cause of the poor responses is the language handicap. Many of these children lived in homes where a foreign language was the rule. They could not be expected to make as high a record as children who had all the advantage of our own language.

In our consideration of these facts, we must realize that adapting oneself to an environment is one sign of ability.

Those children whose parents did not learn the language of their adopted country were probably from a stock inferior to that of those who acquired the language. In other words, if the language of our tests is learned a child makes a better record, he gets credit for being so much more intelligent. This may seem an unsatisfactory rating, but we know also that in many cases the children learned the language because they had the greater ability, and the higher rating is thus justified.

In arranging the classes of children, the procedure was to decide on the number necessary for the children admitted and to make the classes approximately equal in size. In a September entering class we had approximately 300 children. To handle this number of children seven classes were allowed. This meant that each class would include 40 to 45 children. For the first class we selected the 45 children who had the highest intelligence quotients; for the second class we took the next most intelligent 45 children. In this way each class was formed until in the last there were included the 40 or more children with the lowest grade of intelligence.

Considerable discussion has been carried on concerning the desirability of intelligence quotients or test ages for the classification of children. There is no doubt that test age will give a more homogeneous class than intelligence quotients if the children vary in chronological age. Two children may have identical intelligence quotients, yet one be at the time much more capable than the other. One child at the chronological age of 12, with an intelligence quotient of 75, has a test age of nine years. Another child with an intelligence quotient of 75, being only six years of chronological age, has a test age of only four years, six months. The difference in the present ability of those two children is so great that grouping them in the same class would mean as great a variability as is at present found in classes where no examination has been held. Our children were approximately the same in chronological age. They were entering the first grade, and the majority of them were within two to three months of six years of age at the time of the examination. We found that in such cases the intelligence quotient could be taken as sufficiently accurate for this preliminary classification.

It has frequently been said that teachers' judgments were as reliable in classifying children as any intelligence or psychological examination. Without attempting to justify or refute the argument, we were interested in finding out how teachers' judgments compared with the ratings furnished

by this brief psychological examination. For this purpose the teachers rated a total of 1168 children. Their rating system included the five classes A, B+, B, C, and D; the A children being the most able and the D, the least able. These children had been in school from approximately half a term to two terms and a half.

The following tables show the relationship between intelligence quotients and teachers' judgments. Table 4 shows this relationship for children who had been in the school for approximately half a term. There are 437 children in this

TABLE 4

INTELLIGENCE QUOTIENT AND TEACHERS' RATING, PUBLIC SCHOOLS 39 AND 110, 1–A

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	1	3	1	5
50– 54	—	—	2	2	—	4
55– 59	—	—	—	2	—	2
60– 64	—	—	2	11	—	13
65– 69	1	1	5	12	1	20
70– 74	1	1	5	13	—	20
75– 79	—	1	11	5	1	18
80– 84	1	3	20	7	6	37
85– 89	3	2	23	24	—	52
90– 94	2	5	40	14	1	62
95– 99	2	2	46	12	—	62
100–104	6	8	38	12	—	64
105–109	2	5	24	4	—	35
110–114	2	7	16	—	—	25
115–119	—	—	4	—	—	4
120–124	4	1	1	—	—	6
125–129	—	—	2	—	—	2
130–134	1	—	2	—	—	3
135–139	—	—	1	—	—	1
140 up	—	—	2	—	—	2
TOTALS	25	36	245	121	10	437

group. Of those children whose intelligence quotient is less than 70, two children were marked A and B+, being given the highest rating the system of grading allows. Ten children were graded B, which means that they are average or slightly better than average. Thirty were graded C. Only two were graded as low as D. On the other hand, children whose intelligence quotients were as high as 100 were sometimes graded C. Sixteen are so classified and are, in accordance with the teachers' judgments, below the average in school work. Fifteen children of this group are classified

as A pupils, 21 are B+, and of the total of 142 grading from 100 up, 90, or approximately 60 percent, are classed as average pupils.

Table 5 shows similar relations for those children who had been in school approximately one and a half terms.

TABLE 5

INTELLIGENCE QUOTIENT AND TEACHERS' RATING, PUBLIC SCHOOLS 39 AND 110, 1-B

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	—	—	—	—
50– 54	—	—	2	—	—	2
55– 59	—	—	—	2	—	2
60– 64	—	—	4	1	—	5
65– 69	2	1	3	3	—	9
70– 74	1	—	2	4	1	8
75– 79	1	1	12	13	3	30
80– 84	—	2	22	11	1	36
85– 89	1	4	28	12	1	46
90– 94	4	4	32	7	1	48
95– 99	5	6	27	10	—	48
100–104	6	6	30	9	1	52
105–109	11	8	12	7	—	38
110–114	12	2	8	—	—	22
115–119	8	2	3	—	—	13
120–124	4	—	2	1	—	7
125–129	2	—	—	—	—	2
130–134	1	—	—	—	—	1
135–139	—	—	—	—	—	—
140 up	1	—	—	—	—	1
TOTALS	59	36	187	80	8	370

Table 6 shows the same facts for those children who had been in school two and a half terms.

In the tabulation of the quartile rank for the three schools, given in Table 3, it was shown that the children in Public School 110 were slightly above those in Public School 39. The teachers' ratings, however, do not correspond with this classification. In Public School 110, out of 522 children rated, only 15, or approximately three percent, were rated as A pupils. In Public School 39, out of 646 children rated, 96 were classed as A pupils. Thus, approximately 15 percent are classified in this way as compared to three percent of the other school. On the other hand, only four pupils in Public School 39 are classed as D, whereas 23 in Public School 110 are so rated. The comparison of the two schools is shown in Tables 7 and 8.

TABLE 6

INTELLIGENCE QUOTIENT AND TEACHERS' RATING
PUBLIC SCHOOLS 39 AND 110, 2-A

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	—	—	2	2
50– 54	—	—	—	1	—	1
55– 59	—	—	1	2	1	4
60– 64	—	2	2	3	1	8
65– 69	—	—	4	3	1	8
70– 74	1	2	7	12	1	23
75– 79	—	—	25	17	—	42
80– 84	2	3	21	11	1	38
85– 89	1	4	32	12	—	49
90– 94	4	4	31	15	—	54
95– 99	3	6	29	7	1	46
100–104	3	11	18	10	1	43
105–109	2	6	4	4	—	16
110–114	7	6	5	1	—	19
115–119	1	—	3	1	—	5
120–124	3	—	—	—	—	3
125–129	—	1	—	—	—	1
130–134	—	—	1	—	—	1
135–139	—	—	—	—	—	—
140 up	—	—	—	—	—	—
TOTALS	27	45	183	99	9	363

TABLE 7

INTELLIGENCE QUOTIENT AND TEACHERS' RATING,
PUBLIC SCHOOL 39, 1-A, 1-B, 2-A

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	1	2	—	3
50– 54	—	—	2	1	—	3
55– 59	—	—	—	3	—	3
60– 64	—	—	3	8	—	11
65– 69	3	1	10	5	—	19
70– 74	3	1	7	8	—	19
75– 79	—	—	25	16	1	42
80– 84	2	1	35	13	1	52
85– 89	5	—	48	31	—	84
90– 94	9	4	68	24	1	106
95– 99	9	2	60	18	—	89
100–104	11	7	48	16	1	83
105–109	12	3	21	11	—	47
110–114	20	5	21	—	—	46
115–119	9	—	7	—	—	16
120–124	9	—	3	1	—	13
125–129	2	—	2	—	—	4
130–134	2	—	2	—	—	4
135–139	—	—	1	—	—	1
140 up	—	—	1	—	—	1
TOTALS	96	24	365	157	4	646

TABLE 8

INTELLIGENCE QUOTIENT AND TEACHERS' RATING,
PUBLIC SCHOOL 110, 1-A, 1-B, 2-A

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	—	1	3	4
50– 54	—	—	2	2	—	4
55– 59	—	—	1	3	1	5
60– 64	—	—	5	7	1	13
65– 69	—	1	2	13	2	18
70– 74	—	2	7	21	2	32
75– 79	1	2	23	19	3	48
80– 84	1	7	28	16	7	59
85– 89	—	10	35	17	1	63
90– 94	1	9	35	12	1	58
95– 99	1	12	42	11	1	67
100–104	4	18	38	15	1	76
105–109	3	16	19	4	—	42
110–114	1	10	8	1	—	20
115–119	—	2	3	1	—	6
120–124	2	1	—	—	—	3
125–129	—	1	—	—	—	1
130–134	—	—	1	—	—	1
140 up	1	—	1	—	—	2
TOTALS	15	91	250	143	23	522

TABLE 9

INTELLIGENCE QUOTIENT AND TEACHERS' RATING,
PUBLIC SCHOOLS 39 AND 110, 1-A, 1-B, 2-A

	A	*B+*	*B*	*C*	*D*	*Totals*
45– 49	—	—	1	3	3	7
50– 54	—	—	4	3	—	7
55– 59	—	—	1	6	1	8
60– 64	—	—	8	15	1	24
65– 69	3	2	12	18	2	37
70– 74	3	3	14	29	2	51
75– 79	1	2	48	35	4	90
80– 84	3	8	63	29	8	111
85– 89	5	10	83	48	1	147
90– 94	10	13	103	36	2	164
95– 99	10	14	102	29	1	156
100–104	15	25	86	31	2	159
105–109	15	19	40	15	—	89
110–114	21	15	29	1	—	66
115–119	9	2	10	1	—	22
120–124	11	1	3	1	—	16
125–129	2	1	2	—	—	5
130–134	2	—	3	—	—	5
135–139	—	—	1	—	—	1
140 up	1	—	2	—	—	3
TOTALS	111	115	615	300	27	1168

The complete classification of children both according to intelligence quotient and the teachers' rating is shown in Table 9.

From mere inspection it is seen that there is some correlation between the two systems of rating. By the use of the Pearson Formula, $r=\frac{\Sigma X \cdot Y}{N.\sigma_x.\sigma_y}$, the coefficient of correlation was found in three cases. For the total of 1168 children in both schools and in all three classes, the correspondence between teachers' rating and intelligence quotient is such as to give a correlation coefficient of 0.42. The correlation for the second grade class in Public School 39 is 0.44, and for first grade A in Public Schools 39 and 110 it is 0.39. Such coefficients show an agreement between the intelligence rating and the judgment of teachers after they have had considerable experience with the children.

An important factor influencing the degree of correspondence is the attitude we have in making judgments of groups. When we, as teachers, grade a class of pupils, our ratings are almost inevitably determined by the class with which we are immediately concerned. We have a fairly definite idea of how many A pupils there must be in a class. Our problem is the selection of the children who will be so graded.

It is quite clear from this point of view that the A pupils of one year may not be equal in ability to the A pupils of another year. It is possible for them to be either less or more able, depending on the general average of the class.

Our judgments of the children in these classes have been influenced in the same way. A teacher is accustomed to give so many A grades, so many B grades, etc. When all the classes contained all grades of ability, the percentage of A grades would be expected to be about the same. In these classes, where children were grouped according to ability as measured, practically all children in Class I would be A pupils and those in Classes VII or VIII would be C or D pupils. All the intermediate classes would be graded B+, B, or C.

While it is true that practically all the children in Class I were rated as A pupils by the teachers, those in other classes were not graded as expected. That is, many children in the lowest class who were not capable of the standard of work set by children in Class I were rated as high by their teachers; they were also classed as A pupils. The teacher's habits to which we have referred led her to group the children into classes of best, good, fair, poor, etc., and to the best she gave the rating A and to the poorest D. Such a proceeding is highly commendable while we deal with the individual class.

It makes, however, for less apparent correspondence in the judgments of teachers and the ratings furnished by psychological examinations. The reliability of the classification is attested by the principals who report correct placements in at least 90 percent of the cases. The evidence of reliability will be more conclusive as in the coming years we have objective measures of achievement or progress by these children.

Boys and Girls

The difference between boys and girls is shown graphically in Chart II and the quartile ranking is given in Table 10. The extreme low scores are identical, but the boys do not make as high scores as some of the girls.

The average for both groups falls in the 90 to 94 range. The curve for the boys is more nearly like the curve of normal distribution. A peculiar characteristic of the curve for the girls is the small number who test in the range 95 to 100 compared to the number in the ranges five above and five below.

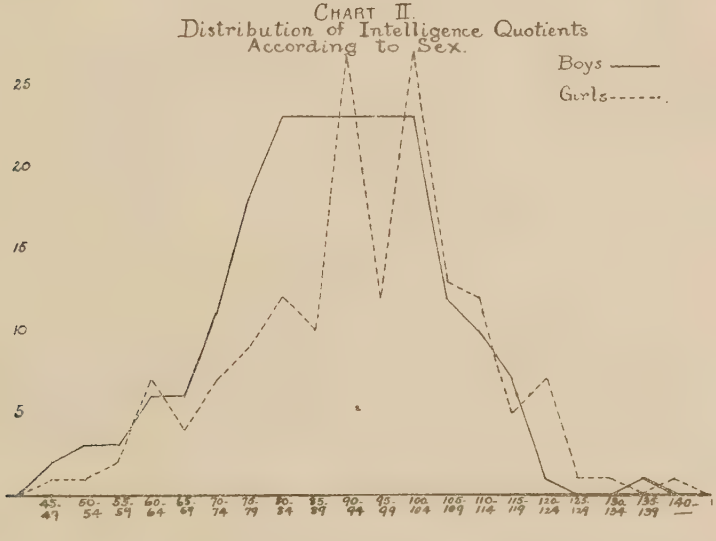


Table 10

Quartile Ranking—Boys and Girls

	Intelligence Quotient	
Quartile	*Boys*	*Girls*
Lower	74	83
Median	90	92
Upper	100	103

While the curves show similar extreme variations, the quartile rank indicates that the girls are somewhat superior. Twenty-five percent of the boys make scores of 74 or less, while the lowest twenty-five percent of the girls rank as high as 83. The medians for boys and girls are 90 and 92, respectively. Seventy-five percent of the boys get no higher than an intelligence quotient of 100, whereas, to include seventy-five percent of the girls we have to go up as high as 103.

On superficial observation it might be supposed that the girls are more intelligent in their early stages than the boys. There is, however, another explanation for this finding. It has been recognized for a long time that parents exercise some selection in sending the children to school. If a child is bright, he tends to enter school at an earlier age; if he is dull or stupid, the parents keep him at home until he is older.

A similar influence seems to be operative in sending boys and girls to school. To these parents, as well as to most others, it seems more essential to have a boy educated than it is to educate a girl. The tendency is to send the boys to school when they are at a less competent stage than the girls. In other words, only the brighter girls are sent to school, whereas boys of a more general average are included in the group. In the long run, however, every child is supposed to register at school, and it may be that if our examinations included every child entering school over a period of a year or two, this difference would not be shown. As we have an opportunity of following up these cases and making a more complete study we shall be able to present the data for every child over a period of years.

Racial Differences

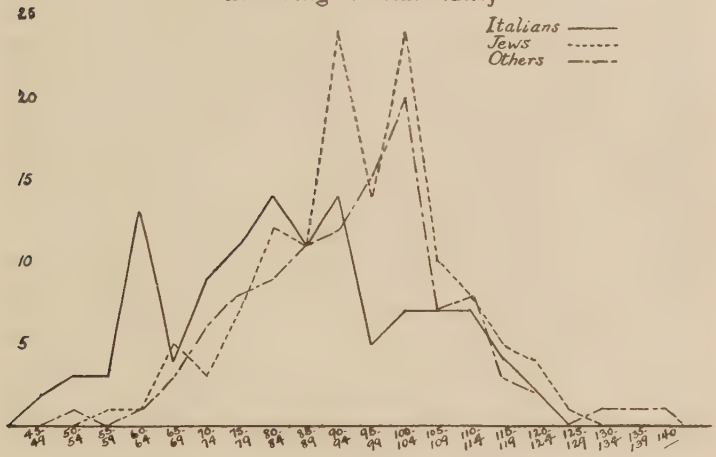
The intelligence of different races has frequently been a matter of discussion, and numerous claims have been set forth as to the superiority of one group over another. These cases could be divided into three groups of approximately equal numbers. There were 33 percent Italian, 36 percent Jewish, and 31 percent of other nationalities, including Irish, English and Norwegian.

The distribution of the intelligence quotients of these three groups is shown in Chart III. The curves to a large extent coincide. The solid line, showing the distribution of Italians, begins slightly lower and ends somewhat lower than the other two. The dotted line for the Jewish children begins at a higher point than the other two, and ends at a higher point than that for the Italians but lower than that for the combined group of other nationalities.

The quartile ranking shown in Table 11 indicates the slight superiority of the Jews over the Italians. This question has been considered at various times in our own earlier work. The first results seemed to indicate that Jewish children of six years of age responded more readily to our tests than Italian children of similar age. Later results contradicted this evidence, showing that the average of the Italian was somewhat above the average of the Jewish children. It is quite possible that a constant difference will never be observed.

CHART III

Distribution of Intelligence Quotients according to Nationality



However, in these distributions the lower quartiles for Italians and Jews were 71 and 80, respectively. The median stood at 83 and 94, whereas seventy-five percent of the Italians made a score of 96 or less, while the Jews went up as high as 101. The quartile rank of the group of other nationalities shows a slight superiority over both Jews and Italians, although the lowest twenty-five percent is somewhat lower than the lowest twenty-five percent of Jews.

TABLE 11

QUARTILE RANKING AND NATIONALITY

Quartile	*Italians*	*Jews*	*Others*
Lower	71	86	83
Median	83	94	96
Upper	96	101	103

Individual Psychological Examinations

John M.'s mother said he was lazy, and she explained his inability in the test by his failure to make an attempt. The psychologist reported that it was true that he did not try very hard, but if the teacher had nothing more than the mother's report to go on, serious injustice would be done the boy. While he looks dull his inability to respond to such questions as the naming of colors, or to carry out three simple commissions, is fair evidence that not a great deal could be expected of him. His test age was only four years, while chronologically at the time of the examination he was six years. The psychologist reported that the performance of the child was influenced to some extent by the attitude of the mother. The boy was evidently disturbed by her remarks, and his responses were modified as her attitude showed approval or disapproval. It is easily seen that such an accurate rating as this psychological examination gives, enables the teacher to discount the mother's report that the child is lazy and to handle the child much more intelligently.

Naomi R. was one of the oldest children admitted to our schools in September, 1921. Her test age, however, placed her below the five year level, and the psychologist reported at that time that her comprehension was poor and her reactions slow. The child also had a speech defect and her talk was rambling and childish for her age. At a later time the psychologist made a more extensive examination and secured more information concerning the child's history. The intelligence rating was not any more satisfactory, but the characteristics which had been noted in the earlier examination, and which operated again in this later trial, were understood in the light of the history given. Serious illness involving a partial paralysis of the right side had left its mark, and was in all probability responsible for the defective speech, the wavering of attention, and the feeling of uncertainty in facing new problems. Because of these conditions, the psychologist recommended special tutoring immediately and predicted that with such attention as could be given considerable progress would be made. The record of this child during her year and a half in the school has justified this prediction and the teachers feel that as a result of the examination a much more satisfactory adjustment has been made.

Ruben S. The psychologist notes that this child is excessively dependent on his mother. He would never make a reply to a question, nor attempt any form of response, until he had appealed to her for approval and support. The atti-

tude of the child was considerably influenced by his mother's constant interference. While his test age was almost equal to his chronological age, his performance in school would be less satisfactory than it should be until the condition which the psychologist had noted and reported was eliminated. With this understanding of the condition and the consequent proper handling of the child, his progress would be greatly accelerated.

A recognition of exceptional ability was the result of the examination of Daniel L. At the time of the examination he was only six years two months of age, but his test record gives him credit for passing several tests for the eight, nine, and even for the ten year level. The psychologist reported that his responses throughout the test were excellent although he appeared at times very much bored by the performance. He was willing to cooperate, but during the examination made the statement that when finished he would have to go home and go to bed. There is no doubt in this case but that his unusual intelligence led him to adopt an indifferent, superficial attitude towards most of the problems he was required to attempt. Placed in the ordinary classroom with duller children, he would undoubtedly develop habits of inattention, slovenly work, and even antagonism. Given an opportunity in the class for brightest children he was surrounded by those of ability nearly equal his own. In order to maintain his position, constant effort was necessary and instead of developing undesirable habits of mental work he developed concentration, persistence, and energetic cooperation.

John M. was another child whose ability marked him out for rapid progress and very successful work. At the time of the examination the psychologist reported him as self-reliant, energetic, eager, and interested. He already had good habits of application and while he was somewhat loquacious, we could predict for him excellent progress provided he was placed in an environment which would stimulate him to his best efforts.

Lauri P. is inquestionably one of those for whom a psychological examination pointed the way to preventive mental hygiene. He was not particularly intelligent, for at the chronological age of eighty months he succeeded only in securing a test age of sixty-one months. His rapid flow of talk, not following any particular line of ideas, and his notions of grandeur, indicated the possible later development of a serious mental condition unless steps were taken to provide a suitable environment. Along with his illogical flow of language and his frequent faulty reference to the things which had been provided for him, he showed himself markedly deficient in

self-reliance, frequently making the statement, "I don't know how to do it." This response seems to be almost a habit and in order to develop his comprehension, persistence, and understanding of reality, it will be necessary to give him a great deal of attention. We believe that the early understanding of this problem will make it possible for this boy to take up his responsibilities in the normal course of events and will prevent the development of more serious trouble.

Environmental and Family History Factors

A chemist or engineer would never begin the development of a project without knowing the quality of the material with which he had to work. In order to produce certain results specific grades and qualities are necessary. Part of the determination of quality depends upon the process through which the material has been put.

It is the same problem which educators have to face in the development of a social product from the material which enters the school. This material is the result of hereditary factors and environmental conditions combined. We must know something about them in order to determine what would be the best educational procedure for the different children. Our investigation involved the study of family and environmental conditions in every case where the teachers found that the children presented special problems.

In order to determine to what extent an individual study of environmental and home conditions might be necessary, we investigated a number of unselected cases. During the month of June, 1922, our psychologists examined 355 children. All of them expected to enter the first grade in September of that year. During the three following months the investigator visited the home of each of these children, and the information thereby secured is reported in the following tables and graphs. The reason for the selection of this particular group is found in the fact that conditions during the months of July, August, and September remained fairly constant, and information secured toward the end of the period might be compared with similar information secured at the beginning.

The 355 children were divided into four groups. The lowest group, including 88 children, was composed of those whose intelligence quotients ranged from 49 to 80; the second group included those with intelligence quotients from 80 to 92; the third and fourth groups were those with intelligence quotients of 92 to 103 and above 103, respectively. In each of the last three groups there were exactly 89 children.

Part of the data secured in this investigation is shown in Table 12. The average intelligence quotients of the four groups is shown in the first column of this table. These averages are 70, 87, 98, and 111. In the succeeding columns in this table information concerning income, rent, age at the time of examination, weight at birth, nursing period, age when the first teeth appeared, age when the child began to talk, the number of diseases, and the number of children per room is given. In a number of cases the specific information could not be secured, and in each column the number in parenthesis is the number for whom that particular piece of information was not secured.

TABLE 12

355 CHILDREN EXAMINED IN JUNE AND INVESTIGATED BY HOME-WORKER, JULY TO SEPTEMBER, 1922

	Av. Intelligence Quotient	*Income per Week*	*Rent per Month*	*Age in Months*	*Weight*	*Nursed*	*Teeth*	*Talked*	*No. of Diseases*	*No. of Children per Room*
49 to 80	70	27.34 (14)	19.18 (11)	69.25	8.36 (34)	11.22 (3)	7.26 (29)	18.06 (6)	1.23	1.24
80 to 92	87	30.06 (9)	20.24 (5)	70.37	8.67 (16)	13.67 (2)	7.56 (10)	10.21 (5)	1.06	1.17
92 to 103	98	30.68 (9)	21.02 (6)	70.06 (1)	8.48 (20)	12.56 (3)	7.51 (9)	15.37 (7)	1.02	0.97
103 and up	111	30.04 (15)	21.08 (9)	68.70	8.57 (26)	11.69 (3)	7.40 (13)	14.70 (8)	1.21	0.97

Income. The data shown in the second column of this Table reveal a condition entirely unexpected by the writer or the investigator. If intelligence means anything in the way of social capability one would expect that it showed in the income received for the services given. As a matter of fact it is only the very lowest group where any material difference is shown. The average income for the lowest group is $27.34 per week, whereas for the three higher groups it is in each case just a little over $30 per week. Outside of those contained in the lowest group there seems to be no differentiation as far as income is concerned.

This condition is clearly shown in Table 13 where the income, in ranges of $5 per week, and the intelligence quotients, in ranges of five points, are shown. The family income which does not reach $15 a week is found in six cases, the intelligence quotients for those six ranging from 65 to 94. The income of $25 to $29 a week is secured by those families where children

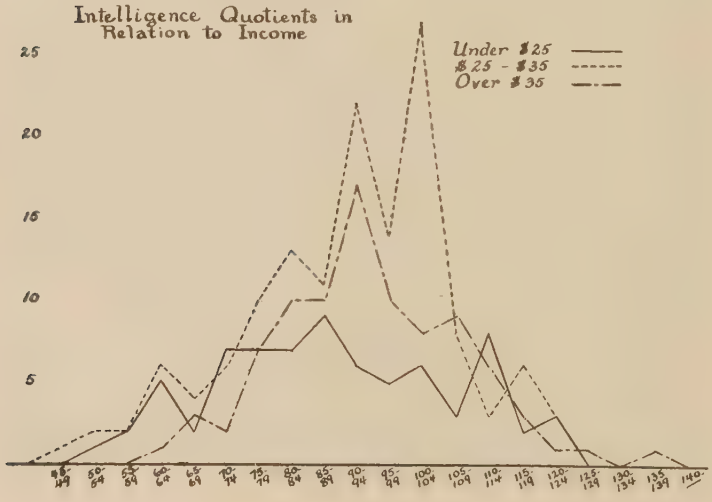
have intelligence quotients ranging from 45 to 124. Even where the income is beyond $50 a week, the intelligence quotients of the children range from 65 to 119.

TABLE 13

INTELLIGENCE QUOTIENT AND INCOME

	Up to 14	*15–19*	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45–49*	*50 Up*	*Unemp. and Pens.*	*Totals*
45– 49	—	—	—	1	—	—	—	—	—	2	3
50– 54	—	—	1	1	1	—	—	—	—	1	4
55– 59	—	—	2	1	1	—	—	—	—	1	5
60– 64	—	1	4	4	2	1	—	—	—	1	13
65– 69	1	1	—	3	1	—	—	2	1	2	11
70– 74	1	2	4	2	4	2	—	—	—	3	18
75– 79	—	2	5	5	5	3	2	1	1	3	27
80– 84	1	3	3	6	7	4	3	1	2	4	34
85– 89	2	1	6	4	7	5	2	3	—	4	34
90– 94	1	2	3	8	14	7	7	—	3	5	50
95– 99	—	2	3	7	7	6	3	—	1	6	35
100–104	—	1	5	7	20	7	1	—	—	9	50
105–109	—	1	2	2	6	4	4	—	1	5	25
110–114	—	5	3	2	1	2	3	—	1	5	22
115–119	—	—	2	2	4	1	1	—	1	1	12
120–124	—	—	3	1	2	—	—	1	—	1	8
125–129	—	—	—	—	—	1	—	—	—	—	1
130–134	—	—	—	—	—	—	—	—	—	—	—
135–139	—	—	—	—	1	1	—	—	—	—	2
140 up	—	—	—	—	—	—	—	—	—	1	1
TOTALS	6	21	46	56	83	44	26	8	11	54	355

CHART IV



A graphic presentation of these data is given in Chart IV. The children are divided into groups of those whose family income is less than $25, those whose income ranges from $25 to $35, and those whose income is $35 or more per week. The base line of the Chart shows intelligence quotients in ranges of five, and the ordinate shows the number of cases. The distributions as shown in this graph differ but little except as there are larger numbers in one group than in another. The extreme variations in income are received about as often by the families of low-grade children as by the families of those whose intelligence quotients are very high.

It has been a fairly general assumption that family income and intelligence quotients gave correlations considerably higher than chance circumstances would warrant. It appears, however, from this study, that there is but little correlation between the income of parents and the intelligence of the children. In other words, the father of a child with an intelligence quotient above 125 secures practically the same income as the father of a child whose intelligence quotient is below 75.

An explanation for this situation should be secured. It is probably found in the fact that our children were almost entirely the offspring of foreign-born parents. Such parents are greatly limited in their choice of occupation. They come to the country unfamiliar with the language, unacquainted with the industrial occupations, and with no method of securing information about the possible opportunities. With limited capital the high grade as well as the low grade foreigners tend to drift into the poor neighborhood and take up the first job that is offered them. During the stress of circumstances in the new environment and with all his obligations, the father does not have the opportunity to secure a position, and consequently an income, which is superior to that of the person of low grade intelligence. The difference, we can only presume, will be shown in the efforts of the present generation, which is developing with the opportunities and prospects which an American education and greater knowledge enable them to grasp.

Rent. Numerous investigations of the intelligence of various social groups have led one to believe that those who occupy the better quarters have the greater intelligence. There seems to be but little doubt of this general statement. In our investigation, however, there is little correlation between the intelligence of children and the amount of rent paid by the family. In Table 14 there is correlated the monthly rent and the intelligence quotients of the children. The

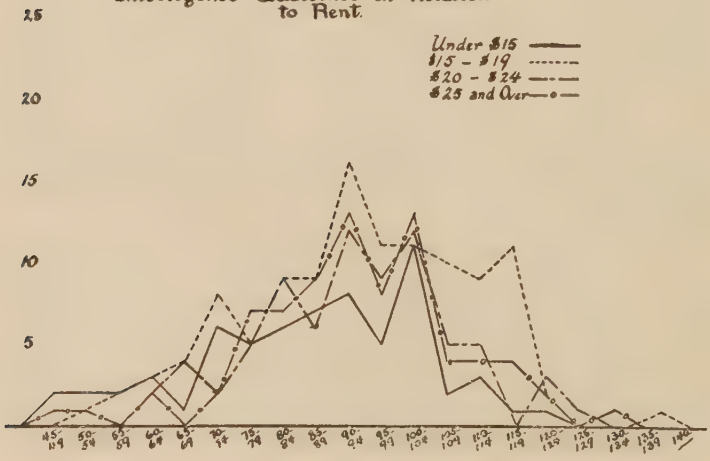
first column of the table shows the intelligence quotients; the second column gives the monthly rent paid up to $14, the third column from $15 to $19, and the succeeding columns the different amounts up to $35 a month and over. The second column, showing the number of families paying rent up to $14 a month, shows that the intelligence quotients of the children range all the way from 45 to 124. The succeeding columns show similar wide ranges. Even those families who pay at least $35 a month have children whose intelligence quotients range from 70 to 119.

The graphic presentation of these conditions is given in Chart V. Four groups are taken, the first three being the same as shown in the second, third, and fourth columns of Table 14, and the fourth group including all those whose monthly rental is $25 or over. Similarity of these groups and distributions is the striking characteristic. There seems to be but little difference between the cost of living quarters for the very intelligent and for the most unintelligent.

A slight difference, however, is revealed in the third column of Table 12. The average monthly rental for those whose intelligence quotients are less than 80 is $19.18; for those whose intelligence quotients range from 80 to 92 the average monthly rental is $20.24; for the two groups whose intelligence quotients range from 92 up, the average monthly rental is just slightly over $21. Although the correlation between family rental charges and the intelligence of children seems

CHART V.

Intelligence Quotients in Relation to Rent



to be slight, there is seen from this table that those who have the least intelligence are likely to live in slightly poorer quarters.

TABLE 14

INTELLIGENCE QUOTIENT AND RENT

	Up to 14	*15–19*	*20–24*	*25–29*	*30–34*	*35 and Up*	*Unknown*	*Totals*
45– 49	2	—	—	—	1	—	—	3
50– 54	2	1	—	—	1	—	—	4
55– 59	2	2	—	—	—	—	1	5
60– 64	3	3	2	2	—	—	3	13
65– 69	1	4	4	—	—	—	2	11
70– 74	6	8	2	1	—	1	—	18
75– 79	5	5	6	4	1	2	4	27
80– 84	6	9	9	3	2	2	4	35
85– 89	7	9	6	3	4	2	2	33
90– 94	8	16	12	4	5	4	1	50
95– 99	5	11	9	4	—	4	2	35
100–104	11	11	12	6	6	1	3	50
105–109	2	10	5	3	—	1	4	25
110–114	3	9	5	—	1	3	1	22
115–119	1	4	—	3	—	1	3	12
120–124	1	2	3	1	1	—	—	9
125–129	—	—	1	—	—	—	—	1
130–134	—	—	—	1	—	—	—	1
135–139	—	1	—	—	—	—	—	1
140 up	—	—	—	—	—	—	1	1
TOTALS	65	105	76	35	22	21	31	355

Number of Children per Room. Although the average rent for these different groups is not markedly different, there is considerable difference in the conveniences and space allowed for the members of the families whose children have different degrees of intelligence. Table 15 shows the number of children per room. The second column includes 14 children where for four rooms occupied by the family there is only one child. The intelligence quotients of these children, however, range from below 50 to over 130. The third column shows the number of children in families where two rooms are allowed for every child. The fifth column shows the number of cases where one room is rented for every child there is in the family. While the coefficient of correlation between the number of children per room and the intelligence quotient is but little above zero, there is an indication that the more intelligent children are from families who provide greater space per child. This fact is clearly brought out in the last column of Table 12, where for each group the average number of children per room is calculated. For that group whose average intelligence quotient is 70, there are, on the average, only

four rooms provided for every five children. In the second group, the children of which have an average intelligence quotient of 87, the arrangements are slightly better, there being five rooms provided for every six children. In the two higher groups the number of rooms provided is a trifle better than one for every child.

From the data so far presented it is difficult to draw any general conclusions. The correlation of intelligence quotients with income, rent, and amount of space provided, are all low. There is, however, an apparent slight difference in favor of those with high intelligence quotients. The families have a slightly higher income, they are able to pay a slightly higher rent, and the amount of room provided for every child is somewhat greater. The difference, however, is not so great as to enable us to draw any definite conclusions from any of these factors concerning the intelligence of any child.

TABLE 15

NUMBER OF CHILDREN PER ROOM

	0.25	*0.50*	*0.75*	*1.00*	*1.25*	*1.50*	*1.75*	*2.00*	*2.25*	*2.50*	*2.75*	*3.50*	*Totals*
45– 49	1	1	—	—	—	—	—	—	—	—	—	—	2
50– 54	—	1	1	—	1	—	—	2	—	—	—	—	5
55– 59	—	—	1	—	—	1	—	1	1	—	—	—	4
60– 64	2	1	4	1	2	—	1	1	1	—	—	—	13
65– 69	—	1	4	2	2	—	—	1	1	—	—	—	11
70– 74	1	3	2	2	6	2	1	1	—	—	1	—	19
75– 79	—	3	5	4	4	1	7	—	3	—	—	—	27
80– 84	1	6	8	8	4	1	3	1	1	1	—	—	34
85– 89	—	4	8	7	7	3	2	1	1	—	—	—	33
90– 94	1	7	15	7	5	13	2	3	—	—	—	—	53
95– 99	—	7	9	8	2	4	1	—	1	—	—	1	33
100–104	3	8	15	10	9	1	—	4	—	—	—	—	50
105–109	2	6	2	9	4	—	—	1	—	1	—	—	25
110–114	2	2	2	3	8	3	—	1	—	1	—	1	23
115–119	—	3	3	2	2	2	—	—	—	—	—	—	12
120–124	—	—	1	3	2	1	—	—	—	—	—	1	8
125–129	—	—	1	—	—	—	—	—	—	—	—	—	1
130–134	1	—	—	—	—	—	—	—	—	—	—	—	1
135–139	—	—	—	—	—	—	—	—	—	—	—	—	—
140 up	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	14	53	81	66	58	32	17	17	9	3	1	3	354*

Age of Mother. We now turn to certain factors dealing more directly with the health and development of the child. The first we consider is the age of the mother at the time of the child's birth. Out of the 355 cases we did not find one child who was born previous to the twentieth anniversary of the

*One unknown.

birthday of the mother. The distribution of the children with age of the mother in five-year periods is shown in Table 16. We find that the children were born when the mothers were as young as 20 or when nearly 50. In each of these five-year periods, however, the children born show approximately the same range of distribution. Children whose mothers were between 25 and 29 years of age have intelligence quotients ranging all the way from 45 to 119. Those whose mothers were 45 years or over have intelligence quotients ranging all the way from 55 to 119. In so far as these children are concerned the age of the mother seems to be of little significance.

Labor Periods. Prolonged labor periods have sometimes been said to affect adversely the development of a child. In 278 cases of the 355 investigated the time of labor was definitely ascertained. These times are shown in Table 17. They range in one-hour periods from 1 to over 10. Those children where labor periods were approximately one hour in length have intelligence quotients ranging all the way from 45 to 129; for two, three and four-hour periods the distribution is quite similar. But prolonged labor periods seem to have no adverse effect on the children's intelligence; those children have intelligence quotients ranging from 75 to 114. It is reasonable to assume that if instead of nine children out of the group where the labor period was 10 hours or over, we

CHART VI.

Intelligence Quotients in Relation to Labor Period

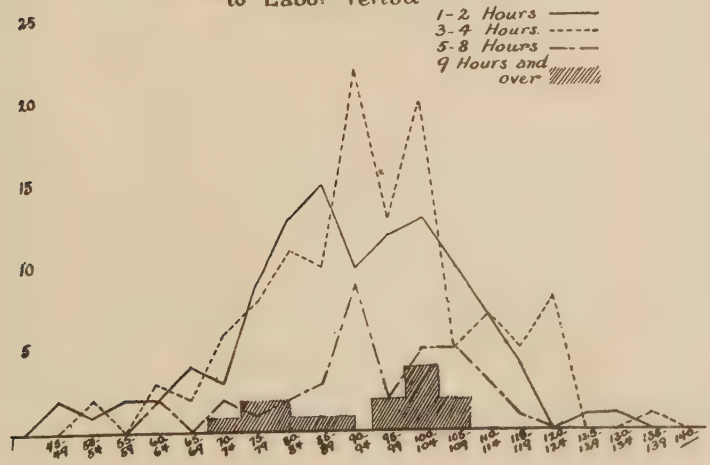


TABLE 16

INTELLIGENCE QUOTIENT AND AGE OF MOTHER AT BIRTH OF CHILD

	Up to 14	*15–19*	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45–49*	*50 Up*	*Unknown*	*Totals*
45	—	—	—	1	—	2	—	—	—	—	3
50	—	—	—	2	—	1	—	—	—	—	3
55	—	—	—	1	—	—	1	2	—	1	5
60	—	—	2	3	—	6	2	—	—	—	13
65	—	—	1	5	—	3	1	1	—	—	11
70	—	—	—	4	10	2	2	—	—	—	18
75	—	—	2	10	6	4	5	—	—	—	27
80	—	—	3	5	7	14	3	2	—	1	35
85	—	—	3	8	5	8	7	2	—	—	33
90	—	—	1	12	11	9	12	4	—	1	50
95	—	—	1	7	8	13	5	1	—	—	35
100	—	—	1	16	17	10	6	—	—	—	50
105	—	—	1	7	8	6	2	1	—	—	25
110	—	—	—	7	7	3	4	1	—	—	22
115	—	—	—	4	2	4	1	1	—	—	12
120	—	—	—	—	3	3	2	—	—	—	8
125	—	—	—	—	1	—	—	—	—	—	1
130	—	—	—	—	1	—	—	—	—	—	1
135	—	—	—	—	—	—	1	—	—	—	1
140 up	—	—	—	—	—	—	1	—	—	1	2
TOTALS	—	—	15	92	86	88	55	15	—	4	355

TABLE 17

INTELLIGENCE QUOTIENT AND HOURS OF LABOR

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10 and Over*	*Unknown*	*Totals*
45	2	—	—	—	—	—	—	—	—	—	1	3
50	1	—	1	1	—	—	—	—	—	—	1	4
55	—	2	—	—	—	—	—	—	—	—	3	5
60	1	1	2	1	1	1	—	—	—	—	6	13
65	3	1	—	2	—	—	—	—	—	—	5	11
70	2	1	4	2	1	—	—	1	1	—	6	18
75	3	6	2	6	—	—	1	—	1	1	7	27
80	5	8	5	6	2	—	—	—	—	1	7	34
85	6	9	5	5	2	—	1	—	—	1	5	34
90	1	9	7	15	3	2	2	2	—	—	9	50
95	2	10	5	8	1	—	—	—	—	2	7	35
100	3	10	7	13	4	—	1	—	1	2	9	50
105	4	6	1	4	3	—	1	1	—	1	4	25
110	4	3	6	1	2	—	1	—	—	1	4	22
115	1	3	3	2	—	—	—	1	—	—	2	12
120	—	—	4	4	—	—	—	—	—	—	—	8
125	1	—	—	—	—	—	—	—	—	—	—	1
130	—	1	—	—	—	—	—	—	—	—	—	1
135	—	—	1	—	—	—	—	—	—	—	—	1
140 up	—	—	—	—	—	—	—	—	—	—	1	1
TOTALS	39	70	53	70	19	3	7	5	3	9	77	355

had 90 or 900, the range of intelligence might well be as extended as for those where the labor period was only one or two hours.

A graphic presentation of these facts is given in Chart VI. The children are divided into four groups—one where the labor period was from 1 to 2 hours; a second where the labor period was from 3 to 4 hours; a third, 5 to 8 hours, and a fourth group of 9 hours or over. The similarity in the course of these curves of distribution indicates but little variation in intelligence coinciding with the length of the labor period.

Weight at Birth. The more intelligent children are supposed to be heavier and taller than the less intelligent. Investigations have shown that in school life those children who make most rapid progress are better developed physically. One would expect that this condition would hold even at birth and that the taller and heavier children would later turn out to be the more intelligent. It was almost impossible to secure reliable data concerning the height of children. Measurements of this kind were made only in a very small proportion of our cases. But the weight was known in 259 of the 355 cases. The record of weight as compared with the intelligence quotient is shown in Table 18. The various columns give the weight from 3 to 14 pounds. Three children weighing 3 pounds at birth had intelligence quotients of 60, 76 and 90.

TABLE 18

INTELLIGENCE QUOTIENT AND WEIGHT AT BIRTH

	3	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*Unknown*	*Totals*
45	—	—	—	—	—	—	—	—	—	—	—	1	2	3
50	—	—	1	—	—	—	—	—	—	—	—	—	3	4
55	—	—	—	—	—	1	—	2	—	—	—	—	2	5
60	1	—	—	—	1	3	1	3	—	—	—	—	3	12
65	—	—	—	—	1	1	1	1	3	1	1	—	3	12
70	—	—	2	—	1	3	2	1	1	—	—	—	8	18
75	1	—	—	3	5	2	2	1	—	—	—	—	13	27
80	—	1	1	3	5	6	8	5	—	1	—	—	4	34
85	—	—	—	2	6	6	7	4	—	2	1	—	6	34
90	1	1	1	4	8	3	9	8	2	1	—	—	12	50
95	—	—	1	1	6	8	4	2	1	2	—	—	10	35
100	—	2	3	4	5	9	7	6	3	1	—	—	10	50
105	—	—	—	—	4	4	2	4	1	1	—	—	9	25
110	—	1	—	2	3	2	3	3	2	—	—	—	6	22
115	—	—	—	1	—	3	2	—	2	1	—	—	3	12
120	—	—	—	—	1	3	3	—	—	—	—	—	1	8
125	—	—	—	1	—	—	—	—	—	—	—	—	—	1
130	—	—	—	—	—	—	1	—	—	—	—	—	—	1
135	—	—	—	—	—	—	1	—	—	—	—	—	—	1
140	—	—	—	—	—	—	—	—	—	—	—	—	1	1
TOTALS	3	5	9	21	46	54	53	40	15	10	2	1	96	355

Children who weighed 10 pounds at birth had intelligence quotients ranging from 55 to 115, and one child weighing 14 pounds at birth, had an intelligence quotient of less than 50. From this table is clearly indicated that the correlation between birth-weight and intelligence is quite low. As a matter of fact, r, in this case, is equal to 0.09.

The lack of any corresponding increase in intelligence with the greater birth-weight is shown in Table 19 and in Chart VII. Table 19 gives the quartile rank of three groups of children; first, those whose weight was 6 pounds or less;

TABLE 19

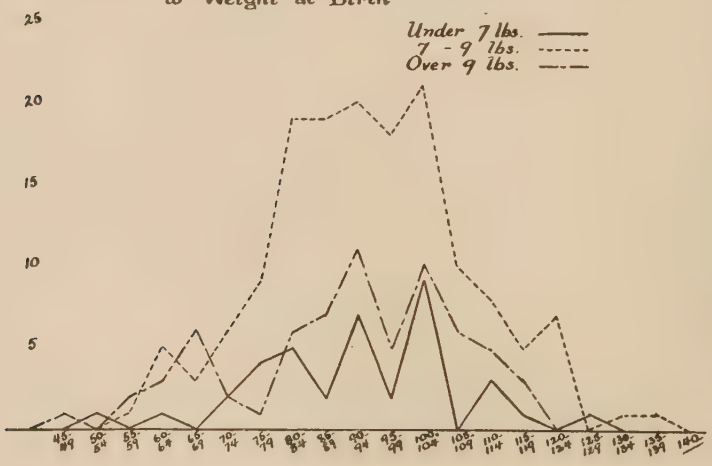
QUARTILE RANKING AND BIRTH WEIGHT

Quartile	*3–6*	*7–9*	*10 and Up*
Lower	83	83	80
Median	91	93	90
Upper	100	102	101

second, those whose weight was from 7 to 9 pounds; and third, those who weighed 10 pounds or over. The median intelligence quotients for the three groups are 91, 93, and 90. Similar variations are found for both the lower and the upper quartiles. The graphic presentation of Chart VII shows the distribution of children in these three groups. In so far as any positive indication is given, one can only say that it is better to be of

CHART VII.

Intelligence Quotients in Relation to Weight at Birth



average weight, that is from 7 to 9 pounds, children of this weight not being found among the very lowest grades of intelligence, but on the other hand are found with the highest grade of intelligence.

Nursing Period. In Table 20 it is shown that the nursing period extended all the way from none to thirty months or over. From our results it is seen that there is practically no relationship between these two sets of data. Six children who were not nursed by the mother at all have intelligence quotients ranging from 50 to 119. Six who were nursed from

TABLE 20

INTELLIGENT QUOTIENT AND NURSING PERIOD

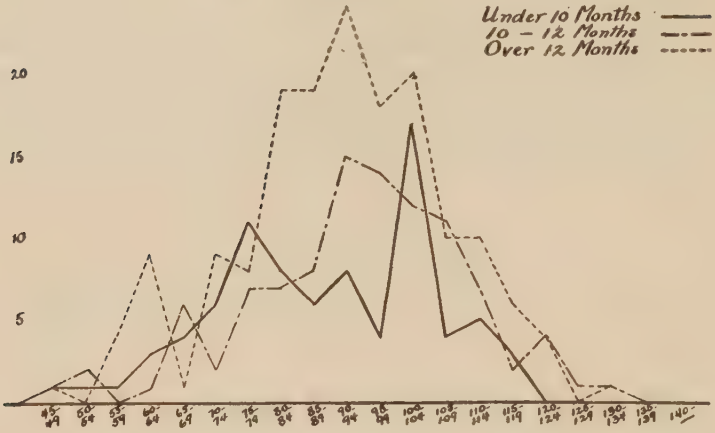
	0	*1–3*	*4–6*	*7–9*	*10–12*	*13–15*	*16–18*	*19–21*	*22–24*	*25–27*	*28–30*	*Over 30*	*Unknown*	*Totals*
45	—	—	—	1	1	1	—	—	—	—	—	—	—	3
50	1	—	—	—	2	—	—	—	—	—	—	—	1	4
55	—	—	1	—	—	—	2	2	—	—	—	—	—	5
60	1	1	1	—	1	4	1	1	3	—	—	—	—	13
65	1	—	1	2	6	—	1	—	—	—	—	—	—	11
70	—	6	—	—	2	1	4	2	2	—	—	—	1	18
75	5	4	1	1	7	3	4	—	1	—	—	—	1	27
80	—	—	4	4	7	8	8	1	2	—	—	—	1	35
85	1	1	1	3	8	8	7	3	—	—	—	1	—	33
90	3	1	—	4	15	9	15	—	—	—	—	—	3	50
95	2	1	1	—	14	8	5	—	2	1	—	—	1	35
100	—	7	6	4	12	5	12	1	1	—	1	—	1	50
105	2	—	1	1	11	6	3	—	1	—	—	—	—	25
110	1	1	2	1	7	6	2	1	1	—	—	—	—	22
115	2	1	—	—	2	3	2	1	—	—	—	—	1	12
120	—	—	—	—	4	1	3	—	—	—	—	—	—	8
125	—	—	—	—	1	—	—	—	—	—	—	—	—	1
130	—	—	—	—	1	—	—	—	—	—	—	—	—	1
135	—	—	—	—	—	1	—	—	—	—	—	—	—	1
140	—	—	—	—	—	—	—	—	—	—	—	—	1	1
TOTALS	19	23	19	21	101	64	69	12	13	1	1	1	11	355

10 to 12 months range from 45 to 135. While the distribution of this latter group is somewhat more extended than that of the former, the extension is towards the lower degree of intelligence as well as towards the higher. The data in this tabulation and the graphic presentation of Chart VIII show but little correlation between the intelligence of the children and the time when they had the advantage of natural nourishment.

First Teeth. The physiological development of a child may be supposed to be correlated with the degree of intelligence. Table 21 gives the record of the time when first teeth appeared correlated with the intelligence quotients. Those children

CHART VIII

Intelligence Quotients in Relation to Nursing Period.



whose first tooth appeared below the age of five months have intelligence quotients ranging from 75 to 125. Children whose first tooth did not appear until six months of age range as low as 45, but also go as high as 139. The median for the group is 90, and for each month period there are about as many below the median as there are above. In other words, between the time of the appearance of the first tooth and the intelligence there is practically no correlation. Outstanding cases may be considered significant, but when the first tooth may appear at six months of age in children who range from 45 to 139, it is quite improbable that a marked degree of importance should be attached to either early or late appearance.

A graphic presentation of these results is shown in Chart IX. The children are divided into three groups. The first includes those children whose first tooth appeared up to six months of age; the second group includes those from seven to nine months; and the third group those whose first tooth did not appear until at least ten months of age. It is true that where the first tooth appeared by the sixth month, the curve of distribution extends to a higher point than in the case of the other two groups, but it is also true that it extends to a lower point. The child with the lowest intelligence quotient had the first tooth by six months of age. The child of highest intelligence showed an equal physiological development.

CHART IX.

Intelligence Quotients in Relation to First Teeth

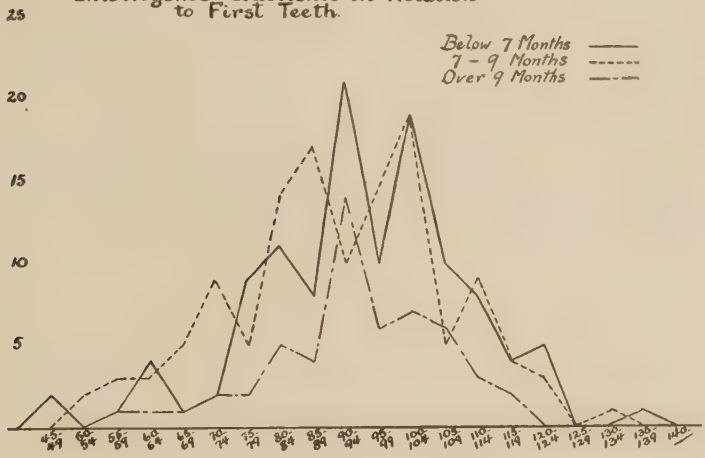


TABLE 21

INTELLIGENCE QUOTIENT AND AGE FOR FIRST TEETH

Below	5	5	6	7	8	9	10	11	12	Over 12	Unknown	Totals
45	—	—	2	—	—	—	—	—	—	—	1	3
50	—	—	—	2	—	—	—	—	—	—	2	4
55	—	—	1	3	—	—	1	—	—	—	—	5
60	—	1	3	3	—	—	1	—	—	—	5	13
65	—	—	1	4	—	1	—	1	—	—	4	11
70	—	—	2	5	3	1	—	—	2	—	5	18
75	4	2	3	4	—	1	—	1	1	—	11	27
80	3	4	4	6	5	3	1	2	—	2	5	35
85	2	2	4	11	6	—	1	2	1	—	4	33
90	1	6	14	7	2	1	3	2	7	2	5	50
95	2	3	5	9	4	2	1	2	3	—	4	35
100	2	9	8	14	5	—	4	—	1	2	5	50
105	2	5	3	4	1	—	—	1	3	2	4	25
110	2	1	5	7	2	—	—	—	2	1	2	22
115	—	3	1	3	—	1	—	2	—	—	2	12
120	1	—	4	1	—	2	—	—	—	—	—	8
125	—	—	—	—	—	—	—	—	—	—	1	1
130	—	—	—	1	—	—	—	—	—	—	—	1
135	—	—	1	—	—	—	—	—	—	—	—	1
140	—	—	—	—	—	—	—	—	—	—	1	1
TOTALS	19	36	61	84	28	12	12	13	20	9	61	355

Age for Talking. Speech seems to be a much better indication of intelligence than any of the other factors we have considered. The correlation of the age when the child learns to talk and the intelligence quotient is shown in Table 22. The distribution of time of first speech is shown in steps of one month, and the intelligence quotients in ranges of five points. Only one child whose intelligence quotient is less than 60 learned to speak before a year and a half of age. Fifty-four of the children whose intelligence quotients were at least 100 learned to speak by 12 months of age. Only one child whose intelligence quotient was 120 or over required longer than one year to begin speech.

TABLE 22

INTELLIGENCE QUOTIENT AND AGE OF TALKING

	10	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25 Up*	*Unknown*	*Totals*
45	—	—	1	—	—	—	—	—	2	—	—	—	—	—	—	—	—	3
50	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1	1	4
55	—	—	—	—	—	—	—	—	3	—	—	—	—	—	2	—	—	5
60	—	—	4	—	1	—	1	—	4	—	1	—	—	—	2	—	—	13
65	1	—	5	—	—	—	—	1	1	—	1	—	—	—	—	2	—	11
70	1	—	8	1	—	—	1	—	2	—	1	—	—	—	1	1	2	18
75	1	—	4	—	—	1	—	2	7	—	3	—	—	—	4	2	3	27
80	2	—	13	1	2	1	1	—	4	—	2	—	—	—	4	3	2	35
85	1	—	9	—	1	1	4	—	7	—	1	—	—	—	6	—	3	33
90	3	3	19	—	2	2	1	—	6	—	3	—	—	—	4	2	4	49
95	2	—	22	—	1	—	—	—	3	—	—	—	—	—	5	1	2	36
100	1	—	20	1	1	4	3	—	10	—	1	—	—	—	6	—	3	50
105	6	1	4	1	3	1	—	—	4	—	2	1	—	—	1	—	1	25
110	—	—	8	2	4	3	1	—	1	—	—	—	—	—	1	1	1	22
115	1	—	4	—	—	1	—	—	—	—	1	—	—	—	3	—	2	12
120	—	—	7	—	1	—	—	—	—	—	—	—	—	—	—	—	—	8
125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
130	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
135	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
140 up	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTALS	19	4	130	6	16	14	12	3	55	—	16	1	—	—	40	13	26	355

The difference in these children is shown quite clearly in Table 23, which gives the quartile rank and age of talking of the children. The children are divided into three groups. The first group includes those who learned to talk before 18 months of age; the second group includes those learning to talk between 18 and 24 months, and the third group is composed of those who did not learn to talk under two years. The lower quartile of these three groups is 84, 75 and 75, respectively. The medians for the three groups are 95, 87 and 87. The upper quartiles are 105, 100 and 97. To include

TABLE 23

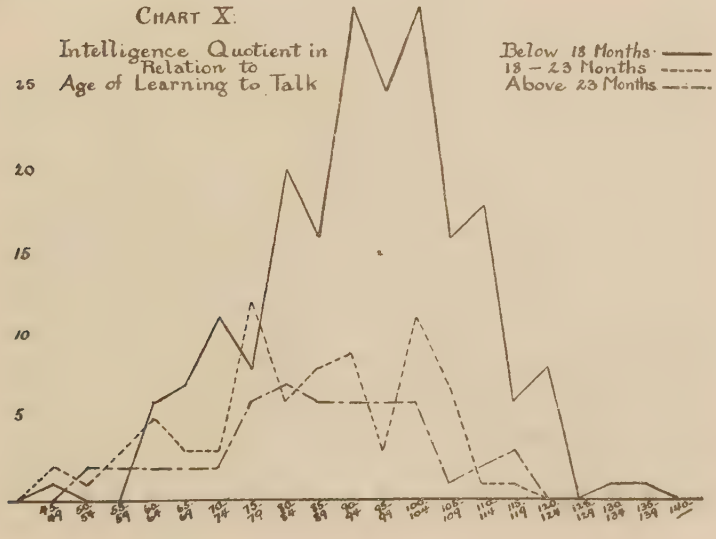
QUARTILE RANKING AND AGE OF TALKING

Quartile	*10–17*	*18–23*	*24 and Over*
Lower	84	75	75
Median	95	87	87
Upper	105	100	97

75 percent of the children who learned to talk under a year and a half of age, intelligence quotients up to 105 are included. Only 25 percent of this group have intelligence quotients as low as 84. Among those who learned to talk between 18 and 24 months of age, 25 percent do not exceed 75, and only 25 percent are above 100. In the group taking the longest time to learn speech only 25 percent are above 97, while 50 percent have intelligence quotients of 87 or less.

The graphic presentation of Chart X shows these factors quite clearly. The whole line is the curve for those who learned to talk under 18 months of age. It is clearly seen that the majority of these are above 50 percent of both the other groups. The curves extending to the right show that those who learned to speak early have the higher degrees of intelligence. The difference between the other two groups is not marked—the curves for them practically coinciding.

Number of Diseases. The parents of children with high intelligence quotients might be expected to guard the health



of their children somewhat more carefully, with a resulting freedom from children's diseases. The five chief children's diseases, including measles, scarlet fever, mumps, diphtheria, and whooping-cough, were included in the tabulation. The result is shown in Table 24. The number of diseases ranges from none to five. The intelligence quotients are shown in the usual five-point ranges. In 93 of the 355 cases, or in approximately 25 percent, the children lived through the first six years of life without suffering from any of these ailments. Their intelligence quotients ranged all the way from 50 to 140 and over. For those children whose number of diseases

Table 24

Intelligence Quotient and Diseases

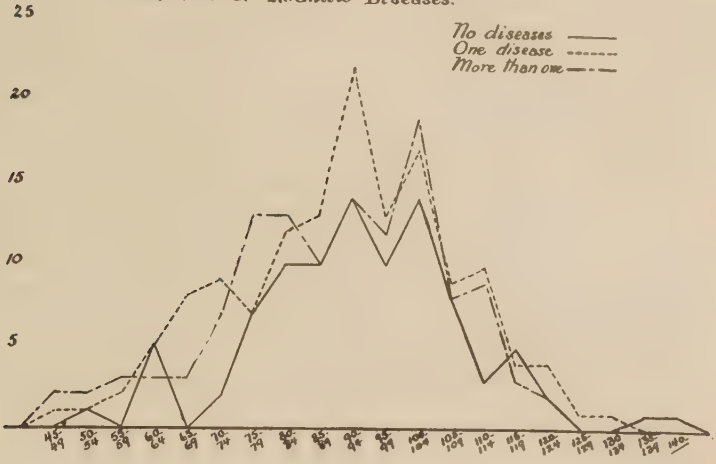
	0	*1*	*2*	*3*	*4*	*5*	*Totals*
45	—	1	1	1	—	—	3
50	1	1	2	—	—	—	4
55	—	2	2	1	—	—	5
60	5	5	2	1	—	—	13
65	—	8	2	1	—	—	11
70	2	9	6	1	—	—	18
75	7	7	8	4	—	1	27
80	10	12	10	2	1	—	35
85	10	13	7	3	—	—	33
90	14	22	13	1	—	—	50
95	10	13	11	1	—	—	35
100	14	17	14	5	—	—	50
105	8	9	7	—	1	—	25
110	3	10	8	—	1	—	22
115	5	4	1	2	—	—	12
120	2	4	2	—	—	—	8
125	—	1	—	—	—	—	1
130	—	1	—	—	—	—	1
135	1	—	—	—	—	—	1
140 up	1	—	—	—	—	—	1
Totals	93	139	96	23	3	1	355

is one or two the range is almost the same. 139 of the children had at least one of these diseases and 96 more had had two. Three of the children had had four of these diseases, and one had had all five. The intelligence quotients of these four, however, extend from 75 to 114. Between the intelligence of the children and the diseases which they have had there seems to be no clear relationship.

This result is shown graphically in Chart XI. The children are divided into three groups, the first, those having no diseases, the second those having had one, the third, those having had two or more. The three curves representing these three groups of children very nearly coincide. The extremes

CHART XI.

Intelligence Quotients in Relation to Number of Infantile Diseases.



are practically the same, and the maximum heights in the curves are reached at the same points. The degree of intelligence which the children show apparently in no way correlates with the care which the parents are able to exercise in guarding them from these diseases.

General Summary from Home Study

The records from the social and home investigation present certain facts quite clearly. The average home consists of three rooms in which five people live. The rooms are usually dirty, inadequately furnished, and in poor repair. The provisions for the children are unsatisfactory, there being no attempt at discipline or training. Children are born but not necessarily cared for. No attempt is made to cooperate in the school program, the general assumption being that the teachers are responsible for all educational work. The mother is fairly healthy, but is fatigued and worn out by the constant pressure of duties. She has no recreation and is usually placid and phlegmatic. She is not disturbed by the children's quarrels or mishaps. A visit was made to one of these homes just at the time a three-year-old child had fallen through a hole in the fire-escape, had fallen down one flight of stairs and rolled down a second. The mother showed no excitement and calmly said, "I guess it's all right. He always falls through that hole."

Probably, one of the most significent features is the language, and in this respect those of higher intelligence are more favorably situated. Ninety-two percent of the bright children live in an English-speaking environment, whereas only sixty-two percent of those of low grade intelligence live in English-speaking homes. In eight percent of the homes of the bright children a foreign language is the only language spoken, while among the low grade only Yiddish or Italian is spoken in thirty-eight percent of the homes.

In many cases the question was asked by the teacher whether or not the mother was employed outside during the day and, if so, what provision for lunch was made during the noon hour. The teachers also wanted to know the attitude of the parents towards the child. Did the mother baby the child and let it have its own way? The teacher reported one child to be the biggest baby in the school. In our home investigation it was found that the parents were very indulgent with the child; they allowed him to do anything he wished and, although over six years of age, he was still being fed from a bottle.

Knowledge of the existence of these various factors has helped the teachers to understand the children and to direct their education more advantageously. Frequently a child was considered dull by the teacher but when she understood that only a foreign language was spoken at home she could appreciate the situation and adapt her method accordingly. A knowledge of the family income, rental, and room congestion aided the teacher in understanding certain phases of the conduct of the child which, otherwise, were inexplicable.

To gain all the necessary information concerning these homes at least two visits have been made to each, and conferences have been held with the teachers concerning every child. Through these conferences the teachers were able to fill a large gap in their contacts with the children at school. They realized that there were probably many conditions at home which were combining to nullify the school instruction. In a few cases the teachers had fairly reliable information. In the majority of cases, however, owing to the pressure of their duties, they were unable to get any information that would suggest a clew to the child's condition.

Illustrative Cases. Sarah N. was a child of rather low grade intelligence and accomplished very little in her school work. The teacher reported, "The child is very difficult to manage, talking constantly and wandering about the room. If disciplined, she will scream and cry. She will bite other children, kick, and scratch them. In a rage she also scratches her own

face and arms. She will not remove her outdoor garments in the schoolroom. She takes property belonging to other children in the room and is very untruthful. She is dull and rather thin, but does not appear to be under-nourished."

Our investigation revealed that the parents' education had been very limited, the mother being unable to learn anything, and the father having such a violent temper the school authorities did not compel his attendance. The parents did not get along well, the husband being jealous of his wife and accusing her of being unfaithful. The mother said, "The child quarreled constantly, attacking children of any age and often fighting with thirteen- and fourteen-year-old boys. She would not care for her brothers and sisters and was indifferent in exposing them to danger." The child is nervous and so fearful that the mother has to sit with her until she falls asleep. She is accused of sexual delinquency, the mother having found her at home undressed and playing with older boys.

The mother also accused the child of making trouble between herself and her husband, the child reporting to the father upon his return in the evening that her mother had had men callers. So great was the antagonism between mother and child that during one interview the mother repeated several times that she hated the child and "would like to kill her." There is no doubt that such a condition almost completely nullifies the educational procedure of the school. When it was reported by the home investigator, the attitude of the teacher was materially altered. She now takes the trouble to supervise the child's activities at the noon hour, and has made special efforts to entertain and instruct the child socially.

Robert's first examination, in June, 1921, resulted in an intelligence quotient of 78. He was then seven and a half years of age and was reported to have a slight strabismus and a tendency to lisping with occasional stammering. Besides these physical handicaps, it is reported that his mother suffered injury two months before Robert was born and that at birth his right arm was completely paralyzed. Several operations were performed, and the arm is now practically all right. Until he was five years old, however, he had no use of the arm, although otherwise he had been a healthy, normal child.

The teacher reported that he had always been a disciplinary problem although he had not had much difficulty with his school work. Some days his progress was good although at other times he seemed to know nothing. He is unusually

bright in relating daily experiences, and he is quick and active physically, although apparently somewhat nervous and restless, frequently causing disorder in the room. He has a boastful manner and apparently a great deal of self-confidence. He always volunteers to answer questions, and will talk for ten or fifteen minutes on any subject. He has a vivid imagination and, although the teacher likes him, she finds that he will do a dozen things in a half hour for which he should be punished.

Investigation showed that the father was killed in the World War when Robert was a year old. The father had been a brick-mason by trade, and had attended school only three years. The mother attended school for only two years, and had lived in France until Robert was five years old. She began work at twelve years of age, and, after the death of Robert's father, had married an American soldier in France.

This stepfather is rough, quick-tempered, and emotional. He never attended school and cannot read either English or French, but can write his name. He has little sympathy for or interest in Robert, stating that he is stubborn, headstrong, and unmanageable. He punishes the child every day and says that he is too lazy to work in school. The home consists of three rooms in a basement, which are dirty and disorderly, the kitchen furnishing a home for six dogs.

In this home environment it is not strange that Robert finds little satisfaction, and during the summer ran away from home several times, remaining for a day or two. Nor is it strange that the teacher is at a loss to know how to handle the disciplinary problem. When she learned of home conditions, however, she secured the cooperation of the playground teachers, who paid special attention to Robert. On many occasions they found that he did not go home for his mid-day meal, and they endeavored to see that his mother prepared the meal for him. After school hours they kept watch and endeavored to stop his roaming around the streets. The teacher does not find him greatly improved in school hours, but believes that his outside associates are more satisfactory.

Angelo is a low grade child with an intelligence quotient of only 71. The teacher reported him to be one of the slowest in the class and, although easy to manage, not taking any interest in the class-room work. The other members of the family seemed to have similar difficulty in their school work, being required to repeat several grades.

The father and mother were both born in Italy but had been in this country for thirteen years. The father never attended school and cannot read or write any language, nor can he

understand or speak English. He is employed as a day laborer and works regularly, supporting his family fairly well. The mother attended school for two years and can read and write a little Italian. She understands English slightly, but cannot speak it. She is small, undeveloped, and anemic looking. Although neat in appearance she has a dull, expressionless face. She is apparently quite stupid, questions having to be repeated three or four times before she could answer them. She cannot talk consistently on any subject, her attention always wandering to something else.

The teacher believed that Angelo's condition in school, his listlessness, and inability to concentrate were due to physical rather than to mental feebleness. The investigation showed the home situation to be anything but satisfactory and, while the child was dull, part of his inefficiency might be laid to the poor home arrangements. As a result, the child was put in the special group receiving lunches from the school, and after several weeks of this treatment became considerably more interested and did better work in school.

Among these young children quite a number were found well advanced in delinquency and social maladaptation. Sam G. is a seven-year-old child in the 1-A grade. The teacher reported him to be the most difficult child in the room. He was rough and boisterous, and made no attempt to either read or do his number work. When called upon he would answer anything that came into his head. The mother stated that Sam had always been well and strong but stubborn and hard to manage. For the past two years she has been unable to control him. Incidentally, she had no idea of the boy's grade or the progress he was making. When these facts were reported to the school, a conference was called and Sam's case was given special attention so that discipline and training from the social point of view might be satisfactory.

John D. had been three terms in school but was in our 1-A class during the term February to June, 1922. In the preceding term his conduct had been very bad. He was constantly annoying other children and fighting them. His mother reported he was a very difficult boy to manage and had been so for four years, since he was three years of age. He was stubborn and unruly and had become a chronic truant. He would stay out until eleven and twelve o'clock at night and, if disciplined, would remain out all the next night. He had started several fires in the neighborhood, and the policeman complained about his conduct at least three times a week. During the term, February to June, 1922, the

teacher, understanding these conditions, made him monitor, and he has apparently taken great pride in keeping the other children in order. According to her statement, he is now very quiet and causes no trouble.

Progress of the Children

The usual grouping of children has included in one class all grades of intelligence. Under such conditions the bright children were at first extremely restless, but gradually became reconciled and would settle down to the level of mediocrity. The dull children became discouraged by their lack of success and gave up in the vain effort to keep up with the brighter children. The teacher found it necessary, under the ordinary school conditions, to devote the greater portion of her time to bringing up the slow children to the required examination level. She frequently realized the futility of attempting to teach some of the children the required subjects, but made her best efforts to meet the curriculum demands. In the constant repetition of work for the dull children, the bright got nothing new, and thereby failed to make the progress warranted by their potentialities.

Some modifications have already been made among the bright children. These have been mainly along the lines of traditional school procedure. Instead of requiring these children to repeat stories that are given in the school textbooks, their teacher gives them an opportunity for self-expression by having them tell stories which they have conceived. Another modification which should be greatly extended was suggested by this teacher when she took her children to the parks. She recognized the need of such outside activities for bright children but, because of the conditions of the school and the training she had had, she does not feel competent to work out all the desirable modifications. Her emphasis has been upon reading. In one year all her children accomplished two years' work and several of them advanced into the third year.

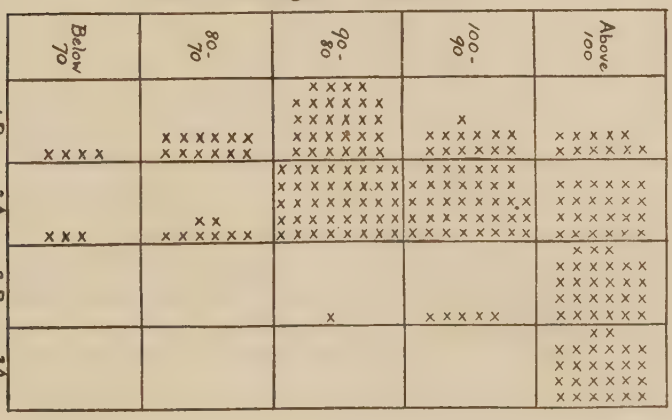
To us it seems highly desirable that considerable modification be introduced into the procedure for the children in the intermediate group. The teachers in this group seem less dissatisfied in carrying on the present schedule. They do not realize as keenly as the other teachers how much the children may profit by a wider experience than is at present offered. For these intermediates, however, the same opportunities which are given the brighter children in their visits to the parks, industrial establishments and museums, as well as in

their studies in the social and civic subjects, may also be provided. Likewise, the manual and motor training offered to the lower groups will prove helpful in their development.

In the lower groups the teachers again recognize the great need for considerable and radical modifications. In the lowest groups of children, the teachers now spend considerable time in motor or manual occupations. The teachers and principals appreciate the futility of spending all the time on traditional subjects, and have worked out this modification. They are, however, limited to the equipment and material at their command, and their training is bound by traditional methods. Their interest, however, has been aroused to such an extent that they have expressed a desire to visit schools in other cities at their own expense to see what can be done.

As an indication of the progress made by the children with special classification, as is made possible through the examinations, the record of Chart XII is illuminating. This chart includes 238 children who were examined in September, 1921, and whose standing was ascertained as of December 1, 1922. They had been in school approximately two and a half terms. Of these children, 88 had intelligence quotients above 100; 55 ranged from 90 to 100, and 95 were lower than 90. Of those whose intelligence quotients were over 100, 26, or more than ten percent of the whole group, were registered in 3-A; another 27 were registered in 2-B. According to the time when they entered school, all of these children should have been registered in 2-A. Only 35, or approximately 40

CHART XII.
Progress of Children in Relation to their Intelligence Quotients.



percent of the children with an intelligence quotient over 100 had failed to make more than a normal rate of progress. Of those children whose intelligence quotient was less than 100, only six, or less than three percent of the total number, had made more than the expected rate of progress. Of this group 56, or approximately 25 percent, had already failed at least once.

While this tabulation shows clearly that the children with high intelligence make more rapid progress than those with low, it still does not show the actual difference in the progress of these children. The principal of the school reported that while these bright children were classed as of 3-A grade, they were nevertheless doing much more advanced work. Within a month from the time this rating was secured the principal reported that many of these children were doing, in some subjects, fourth and fifth grade work. On the other hand, those children with low intelligence must, according to the school regulations, be promoted after one repetition of a term's work unless special arrangements are made by the superintendent. There is no doubt but that many of them were incapable of doing the work of the first term, although they had been promoted to 1-B.

The reports of the various teachers concerning the work of these children is illuminating, and show clearly the different capacities of the children. The teacher of the brightest classes, in making such modification as was mentioned above, has taken the children to the Aquarium, to parks, and to the Library. Not only from interested onlookers but from people in charge of these various places she has frequently received comments concerning the exceptional ability of her charges. The Librarian at first objected to the children from the lower grades in school, but after the first visit her enthusiasm and her cordial invitation have shown her appreciation of the ability of these children.

The teachers of the lowest classes have worked faithfully, energetically and skillfully in carrying out instructions of the Board of Education for the education of these children. They have given unsparingly of their time and energy, and have done all that was possible to develop these children in the lines required by the school procedure. The fact that they had failed at least once in three terms indicates how impossible it is to carry out the required program. The teachers recognize it and look forward to the time when for those children something will be provided which will more nearly coincide with their ability.

REPETITION AND ASSOCIATION IN LEARNING

By H. B. Reed, Grinnell College, Grinnell, Iowa

Repetition has been called the golden rule of learning, but a study of the factor of association will convince us, I think, that association is entitled to a place of equal, if not of greater importance. By association I mean the connecting of new material with something that is already known. For example, I asked a student to learn the pair of words, "elephant—steeple," so that when I gave the word "elephant," she would respond with "steeple." In learning this pair she formed the association "an elephant's trunk is like a steeple." This is learning by association, as contrasted with mechanical learning where two things are connected by the mere frequency of the repetitions. Such an association enables a learner to learn quickly and remember easily, as well as to make a great saving in the number of repetitions which would be required without the association. In recent years there has been a great emphasis upon drill. Drill for speed; drill for accuracy; drill on the minimum essentials; drill to bring the children up to standard—these have been the psychologists' commands to teachers. This certainly is one necessary part of education, and a part to which every teacher must give adequate attention. But drill is only one way by which things are connected and fixed in the learner's mind. There is another way of learning, a way which makes it possible to greatly reduce the amount of drill, and a way which is far more interesting and stimulating than drill—that way is association. It is the purpose of this paper to show in an experimental way the value of association and that there is a function of the teacher which is much more important than giving drill, and that is to make the materials meaningful for the learner.

The value of association may be shown experimentally in the following ways:

1. Memory span experiments for unrelated words and for words presented in sentences.
2. Experiments showing the number of ideas retained from passages of easy and difficult prose which are equal in length.
3. Experiments showing the amount of time for equal quantities of nonsense and of meaningful material.
4. Experiments showing the number of repetitions required to learn pairs of words which the learner associates as compared with the number of repetitions required to learn pairs which he does not associate.

5. Experiments showing the retention for associated and non-associated materials.
6. Experiments showing the amount of transfer from associated and non-associated materials.

I shall describe some experiments of each kind.

1. I dictated to seven sections in psychology having a total of 189 students, 12 series of disconnected words varying in length from 4 to 18 words. Immediately after the reading of a series was finished the students wrote down all they could remember. The sentences were then reread and the words correctly reproduced were checked. The largest series that was correct both for the order and the number of words was called the measure of the memory span. Following a similar procedure, sentences varying in length from 8 to 34 words were given and the memory span calculated. Table I gives the results.

TABLE I

MEMORY SPAN

No. Students	*Disconnected Words*		*No. Students*	*Words in Sentences*	
	Ave.	*A. D.*		*Ave.*	*A. D.*
189	6.55	1.00	11	25.36	5.06

Here it is seen that the memory span for words in sentences is four times as great as for disconnected words.

2. In another experiment four students were asked to memorize 9 lines of easy prose taken from the story entitled "Marble Statue," and 9 lines of difficult prose taken from the section on "Origin of Ideas" in Hume's essay on "The Human Understanding." The experimenter kept the time required to completely memorize each piece.

TABLE II

Average Learning Time	*Origin of Ideas*	*Marble Statue*
Seconds	261.25	111.25

Here it is seen that prose which called up many familiar associations was memorized in less than half the time required for prose which did not arouse any such association.

The value of association is also shown when we compare the time required to learn equal quantities of nonsense and of meaningful material. Other things being equal 30 words should not require any more time to memorize than 30 numbers. I have made a number of tests with equal quantities of numbers and of unrelated words and found that the learning times are practically equal. But when the words are such as to form a stanza of poetry then the learning time for the

latter is greatly reduced. The following table gives the average time required by 32 first and second year college students to completely memorize 30 digits and a stanza of poetry containing 30 words.

TABLE III

Average Learning Time	*30 Digits*	*30 Words in Stanza*	*No. Students*
Minutes	5.52	1.72	32

I take some facts from Lyon's experiment (J. of Ed. Psych. Vol. 5, 1914, 1–9, 85–91, 155–163) to show the same thing:

Lyon learned	200	nonsense syllables	in	93	minutes.	
" "	200	digits	"	85	"	
" "	200	words of poetry	"	10	"	
" "	200	" " prose	"	24	"	
" "	875	" " poetry	"	98	"	
" "	700	" " "	"	91	"	

From these results it is seen that material which is rich in association requires much less time to learn than material which lacks these associations. The amount of the reduction may vary all the way from ½ to 1/10.

3. In a third experiment the entire story of the "Marble Statue" was read to a group of four students, following which they were asked to write down all they could remember. After this the same procedure was followed for a selection of equal length from the "Origin of Ideas." Each selection was divided into 67 ideas, and the reproduction was measured by the number of these ideas reproduced. A second reproduction was called for from two of the students after one week and from the other two students after two weeks. None of the students knew that this would be done. Table IV gives the average number of ideas reproduced immediately, after one week and after two weeks for each of these selections.

TABLE IV

	Immediately	*After 1 week*	*After 2 weeks*
Origin of Ideas	11.5	3.75	4.00
Marble Statue	49	56	39.50

Here it is seen that the immediate reproduction is four times greater for the easy prose than for the difficult, 15 times greater after 1 week, and 8 times greater after 2 weeks. Not only are associations immensely important for immediate learning, but they are still more important for retention.

4. Although the above experiments show the value of

associations in a simple and clear way, yet they are open to the objection that the associations were not definitely analyzed and counted so that an objective and quantitative relationship could be shown between the ease of learning and of retention on the one hand, and the number of associations on the other. To meet these shortcomings a fourth experiment was designed to show the value of associations in a more scientific way. A list of 25 Latin-English vocabularies, of varying degrees of difficulty, was prepared. The experimenter read these once slowly to the subject, who repeated them. The experimenter then went through the list again, but this time reading only the Latin word. The subject responded with the English word if she could. But if she failed after three seconds, she was prompted. If she responded correctly she was asked to state what associations, if any, she thought of as connecting the two words. The experimenter recorded the number of promptings and the learner's report on the association for each pair. When a Latin word was responded to correctly, it was considered learned and was not again presented. When all the pairs were learned, those that were learned by means of some association were checked off, and the average number of promptings required to learn them was calculated. In a similar manner the average number of promptings required to learn the non-associated pairs was calculated. Seven sections having a total of 226 students took part in this experiment, one half of them as experimenters and one half of them as subjects. All the work was done under the writer's immediate supervision and in his presence. After all the records were studied, those that were carelessly done were excluded. There remained the records of 86 subjects which were considered reliable and accurate. In order to test the value of associations for retention, four of the sections were asked to relearn the vocabularies after an interval of 7 days, and the other three sections after an interval of 14 days. After all the vocabularies were learned, each subject referred to the record of the first learning, again checked off those pairs that were learned by means of an association, and calculated the average number of promptings required to relearn those pairs. In a similar manner the calculation was made for the non-associated pairs. In pairing off the students to do this experiment care was taken that those students act on subjects who had never studied Latin. Those who had studied Latin became experimenters.

The average number of promptings required to learn and to relearn both the associated and non-associated pairs is given in the following table.

TABLE V

	No. S's	*Ave.P.to Learn*	*Ave. P. to Relearn After 7 Da.*	*% Ret.*	*No. S's*	*Ave.P.to Learn*	*Ave. P. to Relearn After 14 Da.*	*% Ret.*
Assoc. Prs.	51	1.56	.21	86	35	1.54	.32	79
Non-Assoc.Prs.—		3.22	1.04	67	—	2.72	.97	64

Here it is seen that repetitions are necessary to learn both associated and non-associated pairs, but that only one-half as many are required for the associated pairs as for the non-associated pairs, although the associated pairs are learned with only half the amount of repetition required for the non-associated, yet they are much better remembered. Hence the function which associations play in learning and retention is clear. They make a thing easy to learn and easy to remember.

In the above table it is important to call attention to the influence of the rate of learning upon retention. Meumann is responsible for the statement that those who learn easily forget quickly, and that those who learn slowly forget slowly. The above table shows that just the opposite is true. *Quickly learned, slowly forgotten; slowly learned, quickly forgotten.*

This relationship depends somewhat upon whether the material is associately or mechanically learned. This is shown by calculating the correlations between the rate of learning and the rate of relearning for both the associated and the non-associated pairs; also by calculating the correlations, between the rate of learning for both associated and non-associated pairs and the per cent retained as determined by the Saving Method. This was done for 51 subjects when the interval between learning and relearning was 7 days, and for 35 subjects when the interval between learning and relearning was 14 days.

Learning associated pairs with	
Relearning after 7 days	.61
Per cent retained after 7 days	.12
Learning non-associated pairs with	
Relearning after 7 days	.75
Per cent retained after 7 days	−.16
Learning associated pairs with	
Relearning after 14 days	.35
Per cent retained after 14 days	.29
Learning non-associated pairs with	
Relearning after 14 days	.72
Per cent retained after 14 days	−.21

It will be seen that the correlations are all positive between the rates of learning and relearning, varying from .35 to .75, and they are much higher for the non-associated than for the

associated. This means that mechanically learned material is forgotten more rapidly than the associatively learned and that slow mechanical learners forget more rapidly than quick mechanical learners. When retention is measured by the Saving Method the correlation between rate of learning and percent retained is positive for the associated material and negative for the non-associated material. This means that for the mechanically learned material, slow learners forget more rapidly than quick learners but that for the associatively learned material, slow learners forget less rapidly than quick learners. This relationship may be seen from the following table which gives the average number of promptings required to learn and to relearn and the percent retained after 14 days for both the associated and the non-associated pairs, for the five quickest and five slowest out of 35 learners.

TABLE VI

	ASSOCIATED PAIRS			NON-ASSOCIATED PAIRS		
	Ave. P. to Learn	*Ave. P. to Relearn*	*% Saved*	*Ave. P. to Learn*	*Ave. P. to Relearn*	*% Saved*
5 Quickest	1.00	.13	.73	1.62	.40	75
5 Slowest	2.69	.33	.87	4.90	1.39	71

The Saving Method is, however, not a reliable measure of retention when the rates of learning are variable. No space can be given here to the consideration of this point. Suffice to say that from the standpoint of economy the great advantage lies with the quick learner, both in learning and relearning.

Associations are valuable not only because they make a thing easy to learn, but also because the amount of transfer from one activity to another depends upon them. The value of learning anything depends either upon the value of the thing itself or upon its use for other things. The amount of time required to learn it, as well as the extent to which it can be used for something else, depends upon the manner and kind of associations formed in connection with it. I have no new experiment for proving the transfer value of associations, but possibly it will be enough to recall in this connection some facts from hitherto published experiments.

In my study of associative aids (Psych. Rev., Vol. 25, 1918, 128–156, 257–285, 578–600) 27 subjects learned 4 series of 10 pairs of words each day for 6 days. Here the task was simply to connect the second word of each pair with the first. But on the sixth day two new tests were given, called U and D tests. In the U or up test, the experimenter gave the first word of the last pair and required the subject to give the first word of the pair just above it. He then gave the first

word of the next to the last pair and required the subject to name the first word of the pair just above it, and so on for two series of word pairs. In the D or down tests the procedure was just the opposite. The experimenter gave the first word of the first pair and required the subject to name the first word of the pair just below, and so on for two series of word-pairs. After each correct response reports were taken of the associations, if any, formed between the stimulus and the response. It was found that from 84 to 91 per cent of the successful responses were made possible by the revival of some association formed in the learning of the pairs. These were for the most part incidental associations either of the serial order of the pairs or of their absolute position. When these were lacking the subject required just as much time to learn the pairs in their new order as in the first. This shows that learning things in one order helps one to learn them in new order provided the learner can make use of some association formed in the old order.

In this connection reference should be made to Dr. John C. Peterson's study of "The Higher Mental Processes in Learning." (Psychological Mono.'s Vol. 28, 1920, No. 129.) One of the contributions from this significant work is that it shows the dependence of the amount of transfer on the quality of the associations. The subject's task was to win in a game in which two persons drew alternately either one or two matches from a group of 14. The player who drew last won. The difficulty of the task was increased by increasing either the number of matches in the group or the number which might be taken in one draw. The secret of winning was to force the partner to draw from a group of a certain size. The formula for this secret in the simpler problems is to force the partner to draw from a series which is either equal to or a multiple of L + H when L equals the lowest and H the highest number of matches that can be taken in one draw. For example, if L = 1 and H = 2, then the player will win if he can always force his partner to draw from a group which is a multiple of three. If a player discovered this formula by working with a small group of matches, he quickly learned to win with a large group. Or if he discovered it when the number for one draw was either one or two matches, he would quickly learn to win when the number for one draw would be increased to 3 or 6. But if he failed to discover the correct formula in working with the smaller numbers, the number of trials required to win in the more difficult series was greatly increased. The following table shows the per cent of transfer from the simpler to the more difficult series for thirteen subjects.

TABLE VII

Series L–H	*Ave. No. of Trials to Discover Secret of Winning*	*% Saved as Compared with First Series*	*% of Transfer from Next Preceding Order*
1–2	201.5	——	——
1–3	23.3	88.4	88.4
1–4	10.3	94.9	56.2
1–5	2.3	98.8	77.4
1–6	1.8	99.1	21.7
1–7	1.4	99.3	22.2
1–8	.1	99.9	89.5

The influence of the quality of an association upon the amount of transfer is illustrated by those who developed a wrong idea of the secret of winning. One subject in solving Series 1-3 saved only 31 per cent of his trials in Series 1-2, but the average for his group was 89 per cent. He first supposed the critical numbers were multiples of 5 instead of 4, and later that they were multiples of 6, that is, $1+2+3$, the sum of all the possible draws as in Series 1-2. After solving Series 4 or 12, he drew the generalization that the critical numbers are multiples of $H-L$. In this case the multiples $H-L$ or 8, happen to be the multiple of $H+L$ or 16, so that the idea is true only for this series. But he carried this idea over to the Series 1 or 4, and 1 or 6, with the result that he had to spend far more time on these series than subjects who had generalized correctly. Nine other subjects who solved these two series spent only 10 per cent of all their trials on them, but this subject spent 32 per cent of all his trials on them. Here, then, we have a beautiful illustration of how the correctness of an idea or generalization, that is, the quality of an association, conditions the amount of transfer.

So far it has been shown that associations reduce the number of repetitions required to learn all the way from $\frac{1}{2}$ to $\frac{1}{10}$, that in spite of this reduced imprinting they after all produce better retention, and that they condition the amount of transfer from one activity to another. Since they play such an important part in the learning process, it would be interesting to stop here to make an analytical study of these associations and find out which kind of associations are most valuable for learning and retention, but as this has been done elsewhere, suffice to say that such associations usually fall into three groups: (1) those based on sensory quality; (2) those based on order and position; (3) those based on meaning. All are valuable, but those based on meaning reduce learning time and improve retention much better than do the others.

Coming now to the application, it would seem that the teacher's most fundamental duty is to make her material

meaningful. This does not mean that she can dispense with drill, but that the amount of drill is reduced in proportion as the material is meaningful. How to make the material meaningful is a problem the solution of which depends upon the teacher's ingenuity. Thorndike would make much use of concrete objects — learn the two's by working with pints and quarts, learn the three's by working with feet and yards, learn the five's by working with nickels and cents, learn multiplication by finding the number of cookies required for a picnic, learn decimals by working with dollars and cents, and learn fractions by computing the baby's gain in weight from the fourth to the sixth month. He would also put the child's language into arithmetic, throw out such words as absentees, alternate, automobile, charity, department, hesitation, and instead use such words as baby, sister, fork, doll, toy, and play. All this is in agreement with the law of association, but when he tells us to reserve all reasons and explanations until a habit is mechanically formed by repetition, it would seem that his advice is in direct contradiction to this law. However, it is beside the point of this paper to give devices for making a particular subject meaningful. Suffice to notice that pedagogical improvement is taking this direction.

PERSONAL HABITS

By Percival M. Symonds, University of Hawaii

The habits of conduct which we call personal are at present not clearly defined—not nearly so clearly defined as the habits of hygiene. No one has been to the trouble of cataloguing them, although writers on thrift, conservation or personal efficiency have passed over the general field. Most thinkers in the field of personal conduct have given us platitudes or have codified their personal ideals in the form of very general traits or characteristics, which of necessity must await the formation of many trends and habits and attitudes of actual conduct.

In addition, it is very difficult to delimit the field of personal habits as distinguished from social habits. If we mean by personal habits, habits in relation to personal conduct and personal belongings we are constantly running over into the social field. The web of social living is so fine that there is hardly a thing that we do that does not have its bearing or influence on the lives of others. Many of the habits of conduct which we call manners illustrate this. Such a rule as "Be prompt at meals," although a rule of personal conduct pure and simple, probably attains part of its validity because of its eliminating one form of annoyance to other members of the family. So the person who has learned habits of conservation and is careful of books and clothing, habits which are distinctly personal, from another point of view is acting in ways of extreme social value. However, we can all distinguish between the purely personal habits such as "Be prompt at meals" and a definitely social habit such as "Try to anticipate the needs of your neighbors at the table."

A great many habits also which we call personal derive their validity not from any increase in personal efficiency, but because they give us direct satisfactions or other more indirect values from our fellow men. Such habits as orderly methods in the schedule of daily activities, the care of money, clothing, and investments, are habits which lead directly to personal efficiency. But such habits as wearing clean collars, keeping shoes in good repair, etc., while not directly influencing one's efficiency, are valuable habits because of their effect on other people. A business man, doctor, or scientist

could in all probability be as efficient technically in a soiled as in a clean collar, but insofar he certainly would be at a disadvantage in dealing with other people.

The latter sources of validity are secondary and derived from more primary sources. There is no original value in the stiff collar nor in many of the other dictates of fashion or custom; they are derived often on the grounds of the most casual contiguity. Certain experiences naturally and instinctively arouse disgust and horror. Thorndike enumerates these as "bitter and oily things in the mouth, slimy, wriggling and creeping things on one's flesh, the sight and smell of putrid flesh, excrement and entrails." Things associated with these in any way soon and easily evoke the same reactions. Especially things that cause or even provide a fit environment for such experiences arouse our avoidance and disgust. This commonly gets carried to the extent of intolerence of *dirt* of any kind, and the universality of cleanliness as an ideal is found in modern life. Thus many of our rules of manners may find their origin and their validity in the derivations from some primary instinctive tendency. But when such ideals or standards are set up in the group it is often the part of personal efficiency to follow them. One must weigh rather carefully sometimes the loss that comes from constriction of movement and the restraint of personal freedom, which are direct hindrances of personal efficiency, with the gains that come from avoiding the stares and disapproving looks of others, and also from obtaining their positive approval. Hardly a man but balks at the absurd fashion of wearing a jacket in the summer time, but we all do!

When one looks at the personal habits one finds that no careful classification has been made, nor are the separate fields carefully delimited. Writers on hygiene discuss habits which definitely are a part of manners. Writers on courtesy discuss rules of cleanliness and neatness which are clearly rules of hygiene. Thrift writers borrow rules from the field of conservation—and people interested in conservation borrow rules from what more strictly belongs to thrift or personal efficiency. Truly life does not permit clean-cut classifications and analyses—it is a too integrated affair. But in the interest of education it were well if the habits relating to conduct were a little more clearly comprehended.

Excluding the field of hygiene which is so specialized that it stands well under its own heading, the following are phases of habits of personal conduct:

Personal Efficiency
Thrift
Habits of Study
Conservation
Manners

To these must be added a few more subtle habits, subtle in the sense that they are not the gross activities themselves, but aspects of activities. These subtle habits, which are only aspects of activities, are usually considered the essence of conduct, so high a value does society place upon them. Especially important of these is the regularity with which the habit follows its stimulus. As examples of this may be mentioned regularity, punctuality, persistence, trustworthiness, and honesty. But it must be remembered that these more subtle habits belong to special situations even though they may be common to many different situations. As far as education is concerned it is more valuable to specify the most common situations where these more subtle habits can be controlled than to leave their selection to haphazardness and importunity.

Manners for school may be found in Bulletin No. 54 for 1917 of the U. S. Bureau of Education by Margaret S. McNaught, entitled "Training in Courtesy." The Upton-Chassell *Scale for Measuring the Habits of Good Citizenship* contains an excellent tabulation of many habits which may be considered under the heading of manners.

Habits of Thrift

1. Make and use a budget.
2. Spend money wisely.
3. Practice small saving in paper, pencils, light, food, clothing and money.
4. Keep accounts.
5. Save regularly.
6. Care for books, shoes, clothing.
7. Salvage clothing and paper.
8. Use "orderly methods."
9. Repair clothing.
10. Be neat in dress.
11. Save for a purpose.
12. Save in a bank.
13. Buy for cash.
14. Buy in large quantities what is continually used.

Manners

1. Brush and comb the hair and part it neatly every morning before breakfast. When it gets rumpled, brush it again.
2. Brush and polish the shoes, not forgetting the heels.
3. Do not laugh at the mistakes or failures of others.

4. Do not boast when you win in a contest.
5. Do not whine when you are beaten in a contest.
6. Do not crowd and push through doorways.
7. Do not interrupt a person speaking.
8. Do not flatly contradict anyone.
9. Say "Good morning" to the other members of your family every morning, and on going to bed say "Good night."
10. If you want to help make your home a happy place, always try to be cheerful.
11. You should help different members of your family in every way possible.
12. When an elderly person or a lady enters a room in which a young person is occupying the easiest chair, the younger should give the chair to the elder.
13. When called to a meal, go at once.
14. If it is necessary to leave the table before the meal is over, say "May I be excused, please?" or "Please excuse me."
15. Sit erect, not too close to, nor too far from the table.
16. Do not handle your knife and spoon until served, nor drum on the table, nor fidget.
17. The elbows should be kept near the sides.
18. Chew your food well, and chew it with the mouth shut.
19. Do not smack the lips in eating.
20. When eating soup, take it from the side of the spoon quietly.
21. Never leave the spoon in the cup. When the sugar has been dissolved, place the spoon beside the cup in the saucer.
22. Do not come to meals with dirty hands or face or uncombed hair.
23. Do not fill the mouth too full.
24. Do not pick the teeth nor put the fingers into the mouth at the table, nor lick the fork or the fingers.
25. Do not hold the knife and fork awkwardly.
26. In passing your plate for a second portion do not hold the knife and fork outside the plate at the sides, but lay them down in the plate at one side, near the edge.
27. Do not serve yourself with butter with your own knife; use the butter knife.
28. Do not butter a whole slice of bread at once; break off a small piece to butter.
29. Do not speak of disgusting or disagreeable things at the table.
30. Do not cough or sneeze without turning your head and placing your handkerchief to your mouth and nose.
31. If it is necessary to stand in line in order to purchase a ticket, or receive mail or for any other purpose, never try to push ahead of others, but quietly take the place in line that is rightfully yours.
32. Eating in public places, except in places especially set aside for serving meals, is not behaving in the best way possible.
33. In passing people on the walk turn to the right.
34. Strong young people should offer their seats in street cars to those who are old and weak, to cripples, and especially to mothers carrying babies.
35. Dress and act in such a way that you do not call attention to yourself.
36. If a boy, raise the hat upon meeting a lady or a girl friend or acquaintance.
37. If a boy meets a lady or girl friend on the street and wishes to talk to her, he should not stop and talk with her on the sidewalk, but should walk with her in the direction in which she is going, always walking on the outside, and carrying her packages if she has any.

38. A boy accompanying his mother or sister or any other lady should raise his hat when the lady or girl bows or returns the bow of another, whether he knows the person or not.

Study Habits

(Taken from Whipple "How to Study")

1. Keep yourself in good physical condition.
2. Attend to, remove or treat physical defects that often handicap mental activity, such as defective eyesight, defective hearing, defective teeth, adenoids, obstructed nasal breathing.
3. See that external conditions of work (light, temperature, humidity, clothing, chair, desk, etc.) are favorable to study.
4. Form a place-study habit.
5. Form a time-study habit.
6. When possible, prepare the advance assignment in a given subject directly after the day's recitation in it.
7. Begin work promptly.
8. Take on the attitude of attention.
9. Work intensely while you work; concentrate.
10. Don't let intense application become fluster or worry.
11. Do your work with the intent to learn and to remember.
12. Seek a motive, or, better, several motives.
13. Get rid of the idea that you are working for the teacher.
14. Don't apply for help until you have to.
15. Have a clear notion of the aim.
16. Before beginning the advance work, review rapidly the previous lesson.
17. Make a rapid preliminary survey of the assigned material.
18. Find out by trial whether you succeed better by beginning with the hardest or with the easiest task when you are confronted with several tasks of unequal difficulty.
19. In general, use in your studying the form of activity, that will later be demanded when the material is used.
20. Give most time and attention to the weak points in your knowledge of technique.
21. Carry the learning of all important items beyond the point necessary for immediate recall.
22. You must daily pass judgment as to the degree of importance of items that are brought before you, and lay special stress on the permanent fixing of those items that are vital and fundamental.
23. When a given bit of information is clearly of subordinate importance and useful only for the time being, you are warranted in giving to it only sufficient attention to hold it over the time in question.
24. Make the duration of your periods of study long enough to utilize "warming-up," but not so long as to suffer weariness or fatigue.
25. When drill or repetition is necessary, distribute over more than one period the time given to a specified learning.
26. When you interrupt work, not only stop at a natural break, but also leave a cue for its quick resumption.
27. After intensive application, especially to new material, pause for a time and let your mind be fallow before taking up anything else.
28. Use various devices to compel yourself to think over your work.
29. Form the habit of working out your own concrete examples of all general rules and principles.
30. Form the habit of mentally reviewing every paragraph as soon as you have read it.

31. Don't hestitate to mark up your own books to make the essential ideas stand out visibly.
32. Whenever you desire to master material that is at all extensive and complex, make an outline of it. If you also wish to retain this material, commit your outline to memory.
33. In all your work apply your knowledge as much as possible and as soon as possible.
34. Do not hesitate to commit to memory verbatim such materials as definitions of technical terms, formulas, dates and outlines, always provided, of course, that you also understand them.
35. When the material to be learned by heart presents no obvious rational associations, it is perfectly legitimate to invent some artificial scheme for learning and recalling it.
36. In committing to memory a poem, declamation, or oration, do not break it up into parts but learn it as a whole.
37. In committing to memory, it is better to read aloud than to read silently and better to read rapidly than slowly.
38. If your work includes attendance at lectures, take a moderate amount of notes during the lectures, using a system of abbreviations, and rewrite these notes daily, amplified into a reasonably compendious outline, organized as suggested in Rule 32.

Regarding information concerning these habits of personal conduct two things may be said. One is that for many personal habits there is little or no information available which is pertinent. Some of the habits are still on a basis of faith or custom. Others are simply matters of choice or convention or expediency. What information is there concerning the coming to school on time? We have the vague feeling that the boy or girl who sets up this habit is on the way to being more punctual in general and that as a general habit this means a more successful life. The usual type of "information" which is brought forth in the service of the habit of punctuality is the interview with a famous man, who, when questioned as to what he attributes his success in life, says that it was "his habit of being punctual to his work every morning." As information this has about the same value as the statements of these same men concerning the influence of the study of algebra, geometry and the classics toward success. With regard to punctuality at school it might be possible to establish (it has never been done to the writer's knowledge) that school systems having the highest percentage of punctuality are in other ways more efficient. But even this does not imply the cause-effect relation.

The other fact to be noted concerning information validating personal habits is that not too much help toward the establishment of habits can be expected from such information. Persons, ill informed on the psychology of learning, are ever too sanguine concerning the efficacy of information leading to habit formation. Of primary importance in the establish-

ment of habits is the impulse, motive or desire. When motive is once aroused information is more eagerly listened to and acted upon. Information which is imparted in such a way that it is loaded with motive has practically the only chance to influence conduct. Otherwise it simply finds its expression only in verbal reactions.

Examples of this occur periodically in the orgies of speculation which sweep America. Economists insist that to counteract the harvest of wild-cat speculation which infests the country, knowledge of the nature and earmarks of such worthless promotions must be disseminated. But something more than mere knowledge is necessary. If knowledge alone were sufficient, there is enough in the experiences of ourselves and those about us to make us heedful in the future. In each panic the number of those who are singed is large. Estimates have been made showing that only a few percent ever permanently win in speculation. In the boom of 1919 men recklessly rushed into buying worthless securities or securities which were selling far above their value, against certain knowledge of the failure of such booms in the past. A man will comfortably disregard what he knows to be the truth when a proposition is made to him which promises hope of large gains. Man has no predisposition to act on the basis of truth—for first it is often most difficult to recognize the truth in any specific situation and second man is always being urged on by biased motives.

This emphasis on the primacy of habit formation should lead no one astray as to the excuse "I did not know." Suppose he did know, have you any guarantee that action would have resulted? As *pure information* it probably would not have influenced conduct in the slightest. However, most information is not pure, it is very often loaded, if with nothing more than the authority of the source of the information.

Information, however, is of much greater value in the formation of attitudes or the tendency to make verbal reactions. As in all learning, "we learn the reaction we give birth to," and once we can have the pupil make the reaction the chances are weighted in the favor of his making the same reaction subsequently. So we may feel somewhat sure that if we teach a boy in school the reasons for taking out life insurance, he will in later life sponsor the cause of life insurance in a discussion in any place where a verbal choice is made, even though he has made no move to take out insurance himself. Insofar as conditions are to be socially regulated, the citizen should be biased toward the rational course. Such topics as the threatened extinction of bird and animal life, regulations

of traffic, bank and insurance company regulation, and others may well be included in the school curriculum to set the bias of the upgrowing generation toward attitudes which are today accepted by thinking people.

This matter of educating persons toward making verbal reactions works in a round-about way toward influencing personal conduct. Information may be impotent to prevent a man's speculating when his desire has been aroused and the speculation has been brightly colored. But if some friend whose opinion he respects recalls to him certain facts about the dangers of buying oil stock, or the absurdity of rash promises of promotors, this second hand personal influence may be efficacious even though the information in its impersonal channels fails. Likewise propaganda "is the impression on the individual of the collective advice" and as such has great weight in influencing conduct. The possibility of forming tendencies toward verbal reactions—shall these be called attitudes?—is sufficient reason for teaching much information concerning the basis for personal habits, especially those which may be influenced by external regulation.

The question of reasoning about personal conduct is difficult to discuss because of the various aspects of personal conduct. Such a phase as thrift is easily amenable to problem solving because the material is concrete, countable and may be put down in black and white. Hence we find that the topic of reasoning concerning thrift is well organized, usually finding its place as a sub-topic of arithmetic. Problems of budget-making, keeping accounts, deciding as to investments, expenditures, in short, all questions of economy are well organized. On the other hand reasoning about other phases of personal conduct has up to the present time received very little attention or organization. Probably no subject matter in school which is at present used as a basis for problem solving has the importance for the average individual that personal conduct has.

In this connection Parker in his "Methods of Teaching in High Schools" says "It is in connection with such problems that most high school students will do most of their reflective thinking after graduation." He gives samples of such problems:

"*Problems of Making a Living.* For example: What are my capacities? that is, for what am I fitted by nature? What are the opportunities in various vocations? What are my opportunities to secure training and how can I best take advantage of them? How shall I secure a position? What attitude shall I assume toward my work? How keep on

improving myself? How keep in touch with advances in my vocation? How devise improved methods of manufacturing, transporting, selling, recording, etc.?

"*Recreational Problems.* For example: Have I time to read for pleasure? Shall I read what I like or read for 'high brow' motives? How much shall I go to the theatre? Shall I go to be amused or to be improved? Shall I keep up my music? Shall I play golf? What clubs shall I belong to? Shall I play bridge or poker? Shall I gamble? How shall I spend my vacation?"

Such problems are of paramount importance partly because the problems of choice in personal conduct are so numerous and insistent and partly because so little of personal conduct is really reduced either actually or in theory to set rules or habits. The pity then is that such problems are not organized well enough to become the basis for school instruction. The main fault lies in the lack of major premises—the lack of a stock of valid general facts, laws, and principles on which an individual can base his decisions. And this is due to the fluid nature of society and the large number of unmeasurable variables which usually determine the results of any line of action.

As usual in the realm of conduct we find that we have occasion to think naturally only when habit is insufficient. When the situation has aspects which present difficulties or strangeness, then, if ever, we are aroused to think. It is a pity that youth must try its fling at various follies and excesses before it finds that these are not bringing the satisfactions supposed. Only when we find that unthoughtful behavior does not give us what we most want are we naturally stimulated to think. (Even then thought may not follow, but unthoughtful trial and error behavior may seek a solution.) This is why school courses or problems of conduct conducted on the discussion basis so often fail. Youth is not ready to sit down and plan its behavior—it wants to act. Can the reader imagine the average young man sitting down to decide whether to play bridge or poker? Or even whether or not to gamble?

There is, however, a very good reason for beguiling a youth into a consideration of the social results of his personal conduct. It is an oft repeated truth that we can do nothing to ourselves alone. However, one has to be taught to judge the social results of personal conduct when these results are obscure. Throwing a lighted match down in the woods has caused forest fires, although the careless individual speeding away from a picnic by the side of the road may be quite

oblivious to the consequences of his unnoticed act. To be placed in the same category are those small acts, inconsequential of themselves, but which, if repeated by enough people, have untoward social consequences. To shoot a fox, a deer or a duck of itself might almost be called an unmoral act. But if thousands of men do so it results in extinction of animal life and comes to have important consequences for society. Many of the traits of character so valued by society also depend for their validity on this obscure piling up of acts infinitesimally important in themselves. Honesty is an example. Copying another's work to pass in as one's own in school, if it were to occur only once would have an unobservable influence on the result of the student's work. Of course, moralists usually point out that doing such a thing once is like a hole in a Holland dyke—it makes it easier to do this same thing. Probably of equal or greater importance is its social effect influencing social standards of living. Because of this social importance such traits as honesty have come to be considered of extreme value of themselves, whereas any one exception, if it were singular, would have no appreciable influence. However, these obscure results, whether personal or social, need definite elucidation and discussion, otherwise they would almost certainly be overlooked. The person who understands the rational basis for such phases of conduct is on a much saner basis than he who accepts them on the basis of authority.

After all, perhaps the most that education can do toward making personal conduct more rational in these phases where definite habits are not sufficient is to present a few general problems which recur again and again in experience, or problems which have solutions which recur again and again. Among these I will mention knowing where to go for advice about employment and investments, the avoidance of quack purveyors of cheap success, wealth or what not, the use of bureaus and guides for the dispersing of advice and the use of account books, budget schemes, files, memoranda devices for personal efficiency. It may not be possible to teach people to reason out the effects of their own conduct, but it is possible to teach them to use a great many solutions which have been discovered by others.

Even when the most has been done in teaching a person to reason concerning his personal conduct there is no guarantee that the results of this reasoning will carry over into conduct. Unfortunately reasoning and conduct are not linked with any such causal connection. It is quite possible for a person to know what should be done and how to do it without having

this knowledge influence his conduct. Conduct depends on purpose or motive. But the service of reason is in showing the rational way once the purpose is aroused.

There is a tendency to be a little suspicious of training in manners. Manners are specific and apply only to rather circumscribed situations—the situations in which they were learned. Hence training in manners is sharply contrasted with the development of character. For character we think of as something internal, some uniform disposition of the individual which will work notwithstanding the situation encountered. Character is that quality of the individual which makes him kindly in irritating situations, brave in the face of danger, honest under great temptation, trustworthy under heavy responsibility. This is contrasted with manners which are fickle—being polite to friends but boorish toward aliens; well behaved at home, but a rascal abroad; deferent and gracious in the presence of those whom we respect but harsh and overbearing toward servants and inferiors.

I wish to take the position that character grows out of manners, and that manners are the foundation stones of true character. This stand puts our conception in line with present day psychology which states that character is not some faculty, some thing in itself which blossoms out full-fledged under the beams of some inspiration or some religion, but is the result of a development, a development which, starting in with the elements of behavior, gradually refines and makes general what in the beginning is crude and particular. To be sure, manners are often vulgar, especially when we feel that they are fawning and insincere, the surface play of an underlying mean and hypocritical disposition. But the trouble is not that the manners themselves are bad—they have not been carried far enough. On the other hand it is impossible to think of a person of high character who is not well-mannered, at least along the lines which make his character great. For instance, one may conceive of a man of sterling integrity who eats with his knife. His integrity gives him an element of high character and insofar as his manners go, manners which we could associate with integrity—keeping appointments, keeping agreements, fulfilling promises, good workmanship, respecting property, etc.—they probably could not be criticized. But if we find that his poor table manners annoy other people or are unhygenic, then we would say that his character is faulty along the lines of respect for other people or good health. Perhaps the discrepancy attributed to character and manners arises from the emphasis usually given to each, for where in character we may prize such things as

integrity, kindness, good sportmanship and the like, in manners people are only too often concerned with the purely conventional.

The point that I am making is best brought out by the following anecdote. "A gentleman advertised for a boy, and nearly fifty applicants presented themselves. Out of that number he selected one and dismissed the rest. 'I should like to know,' said a friend, 'on what ground you selected that boy, who had not a single recommendation.' 'You are mistaken,' said the gentleman. 'He has a great many. He wiped his feet when he came in, and closed the door after him, showing that he was careful. He gave his seat instantly to that lame old man, showing that he was thoughtful. He took off his cap when he came in, and answered my questions promptly, showing that he was gentlemanly. He picked up a book which I had purposely placed on the floor, and placed it on the table, and he waited quietly for his turn instead of pushing and crowding, showing he was orderly and honorable. When I talked to him, I noticed that his clothes were brushed, his hair in order. When he wrote his name, I noticed that his finger nails were clean. Don't you call these things letters of recommendation?" I suppose these actions were safer indications of true character in a strange office than they would have been at home.

Let us look at this point a little more closely. Every act when first performed is a specific act and is performed in a specific situation. With the proper set or adjustment the same act may be repeated again in that same total situation. Likewise with the proper set or adjustment certain parts or elements of the total act may be repeated under the appropriate stimulus. To be more specific, a small boy on coming into his house by a certain door into a room is confronted by his mother, who says, "Take off your cap when you come into the house," and he complies, as he is accustomed to do in the past to his mother's requests. So at another time he may take off his cap or his hat or whatever he has on his head when entering any door, in any house whatsoever. He even learns to distinguish between houses and stores. Manners may have any degree of generality. One would hardly dignify an act which follows *a request* by calling it good manners, although the act of taking off one's hat *without being told to* on coming into the house might be called good manners. If one takes his hat off only when coming into his *own* house we would still call that good manners, but of a rather narrow sort. So manners may be of varying degrees of generality. Manners which work only in special situations we despise.

Manners which work in any situation, no matter how difficult, we call character.

It is impossible to aim at general habits or qualities without utilizing special ones. One cannot achieve directly kindness or chivalry or honesty; these must be reached via a number of more specific acts. It is not enough, however, to aim merely at "manners." One should aim to make the specific qualities general so that acts which originally function only in certain total situations will eventually be made to follow certain key aspects of the situation. This would be the formation of character. This is the program for the education of character and education must know the following in order to confidently set about this task: (1) the specific responses that are held to be the earmarks of the desirable character, (2) the key aspects of the situation which should bring about such responses. As an example may be mentioned "Being satisfied by justice—in the case of conflict of interests." But such an extremely general trait is reached only by the way of such acts as obeying the rules when playing all kinds of games, seeing that others obey the rules, giving the opponent a fair chance, defending absent persons from slander, standing for fairness in elections, etc., etc. And each of these is somewhat more general than the specific instance where it must be first encountered.

This is precisely analogous to the formation of concepts. In the formation of such a concept as democracy, for instance, one has this, that and the other contact with democracy—as a form of government, as a manner in which an institution is run, as a kind of country, as a social theory, etc. Gradually, however, as we find the word used in these different connections but with a certain core of meaning and contrasted with autocracy, factory-system, etc., we come in time to associate democracy neither with a form of government, nor with the manner in which an institution is run, nor with any of the others, but with anything relating to social relationship or organization wherein the personality of the individual is respected. Concepts are verbal or mental reactions (according as one is a strict behaviorist or not)—these general traits of character are conduct reactions. Otherwise they are precisely comparable. Just as there is no tight relation between ideas or facts in the *specific* levels and conduct so there is no tight relation between mental concepts and *general* traits of character. The same principles apply. Ideomotor action is not a true description of behavior either with regard to specific acts or with regard to more general ideas and traits. The boy who knows what generosity or good sportmanship or

self-control is will not necessarily practise them, unless perchance these acts have in the past been led to wait on such concepts as stimuli. No; here as elsewhere in conduct, activity, even of this highly general sort, depends on the set or drive or purpose and all the laws of learning. And as with the more specific acts, if these general concepts can become conditioned, then perhaps, all other conditions being fulfilled, they may become effective stimuli to these general traits of character.

Manners usually apply to certain specific situations. The man with perfect manners has the perfect character in those aspects where the manners apply. True character means the general character of these habits. Perhaps we need to recast our conception of manners to fit more closely the kind of character which we desire, or perhaps we need to recast our concept of character to fit more closely what we consider desirable manners. At any rate the two must play into each other, for the general depends on the specific.

AN ANALYSIS OF A FIRST GRADE GROUP

By Edna A. Collamore

What is a first grade? It is a net cast into the sea that drags forth fish of every kind—docile cod, over-active catfish, gregarious mackerel, individualistic swordfish, sinister eels. What divers destinies await these young fry! The herring come all standardized for factory exploitation. Perhaps the eel, of whom the Japanese proverb says, "You may bind the eel in a bamboo sprout, but you cannot change his wriggling disposition," has a diplomatic future. The octopus, sedentary, with remarkable facilities for collecting data, and an ink-well at his heart, seems specially created to be a university student. And the jellyfish may drift placidly into matrimony, and allow itself to be passively supported.

The teacher's task is simple. Being given a six by eight aquarium in which to confine forty varieties, she is enjoined: 1, to keep them in as good physical condition as when they had the freedom of the seas; 2, to keep them as mentally alert as if still battling with wind, wave, and natural enemies; 3, to arrange a program of instruction that shall foster the individual development of a salmon or a starfish; 4, to persuade dogfish and mackerel that cooperation is better than complete amalgamation. Moreover, no game warden examines the net and orders the undersized fish thrown back and given a chance to grow. All that the chronological age net catches must be flung into the aquarium.

It is always interesting to examine the fall catch. Statistics are based on a goodly number of cases, 10,000 being a desirable minimum. When a small group, only forty first graders, is being considered, anything under heaven may be true, and usually is. Tests show, according to Terman, that six-year-olds differ from one another fully as much as do fourteen-year-olds.

During the first ten weeks of the school year there have been fifty-nine children in my class, though not more than forty-eight at any one time. The physical observations were made the first week in October, the forty-two children then in the class being weighed and measured the same hour.

The birthplaces of the fathers are as follows:

United States	27
Canada	4
Armenia	3
Ireland	3
Italy	1
Greece	1
England	1
Austria	1
Lithuania	1

Three under United States and one under Canada are colored.

The occupations are varied—small storekeepers, skilled factory labor, a contractor, a lawyer, a fireman, a chauffeur, a traveling salesman, and so on. There are no suggestions of wealth nor of extreme poverty.

A fact that has some bearing upon the child's ability to make social adjustments is the number of children in the family.

8	are only children
14	have one brother or sister
9	" two
3	" three
5	" four
3	" five

The average number of children in an American family is usually given as between two and three.

Kindergarten experience is particularly beneficial to only children. Seventeen of the forty-two did not attend kindergarten, and none of the only children attended.

As to age distribution,

Two	have	a	chronological	age	of	5	years,	11	months
Seven	"	"	"	"	"	6	"	0	"
Thirteen	"	"	"	"	"	6	"	1	"
Five	"	"	"	"	"	6	"	2	"
Two	"	"	"	"	"	6	"	3	"
Four	"	"	"	"	"	6	"	4	"
Two	"	"	"	"	"	6	"	5	"
One	"	"	"	"	"	7	"	6	"
Two	"	"	"	"	"	6	"	7	"
Three	"	"	"	"	"	6	"	9	"
One	"	"	"	"	"	7	"	5	"

This does not accord with the larger body of fact, either as regards range or median. Ayres gives a frequency distribution showing the age upon entering the first grade of 13,868 pupils in 29 cities who were about to graduate from the eighth grade. It has been computed from this chart that the median age of entering the first grade is 80 months. The median here is 6 years, 1 month, with 38 children below the 6 year, 8 months standard. Last year in my first grade

there were pupils of 8, 9, 12, and 13 years. A range of 6 to 14 may be found in first grade rooms. This includes repeaters, neglected children, and recent immigrants. The group under consideration are all beginners.

Dr. Burnham in his monograph, "A Health Examination at School Entrance," suggests that only those children who have attained the following developmental standards be allowed to enter school:

Height, at least 115 cm. (45 inches plus)
Weight, at least 20 kg. (44.09 pounds)
Circumference of chest, 53 cm. (20.87 inches)
The child should have all four of the 6-year molars

Thirteen	children	have	no	6-year	molars
Seven	"	"	2	"	"
Three	"	"	3	"	"
Nineteen	"	"	4	"	"

The two youngest children chronologically, 5 years, 11 months, have the four molars. Among those who have none are 10 boys and 3 girls. Among those who have all four are 13 girls and 6 boys. This sex difference is in accord with general data. According to Pryor, the bones of the female ossify in advance of the male. This is measured first by days, then months, then years. The trapezoid bone of the wrist matures between 4 and 5 in females, between 5 and 6 in males. Since the X-ray is needed for the examination of the wrist bones, the teeth are the most easily read index of anatomical age.

The chest circumference is the only measurement in which the whole group has passed the minimum standard.

21 inches	one (girl)
21½ "	two (girls)
22 "	four (1 girl, 3 boys)
22½ "	seven (2 girls, 5 boys)
23 "	nine (4 girls, 5 boys)
23½ "	eleven (5 girls, 6 boys)
24 "	five (3 girls, 2 boys)
24½ "	one (boy)
25½ "	two (girls)

In height, half are above and half below the minimum standard.

41½ inches	three (2 girls, 1 boy)
42 "	one (girl)
42½ "	one (girl)
43 "	five (1 girl, 4 boys)
43½ "	two (girls)
44 "	eight (4 girls, 4 boys)
44½ "	one (boy)

45½	"	five (1 girl, 4 boys)
46	"	eight (2 girls, 6 boys)
46½	"	two (girls)
47	"	three (2 girls, 1 boy)
47½	"	two (1 girl, 1 boy)
48	"	one (girl)

In weight, 19 are below and 23 above. The children vary in weight from 35 to 55 pounds, both extremes being feminine. Under the minimum are 10 girls and 9 boys, over the minimum are 10 girls and 13 boys. Using the actual weight as numerator and the ideal weight as denominator, a table of percentages was derived, that those more than 10% underweight might be given special attention. It may be significant that 6 of the 8 having the highest percentages are girls, and 6 of the 8 having the lowest percentages are boys. Girls are said to outstrip boys in physical development at this period.

If only those children were admitted who had reached the suggested standards, my school would number but 10, 32 failing to meet one or more of the requirements. In an article published in the PEDAGOGICAL SEMINARY for March, 1918, Mr. Zigler writes, "The child of retarded development will probably be unable to keep up with his class in addition to his retardation period being prolonged." Out of the 32 in this group, at least 25 are perfectly able to keep up with their classes. This does not prove, of course, that school may not prolong their retardation periods, nor does it prove that it would be poor economy to delay school entrance, since, according to Winch, "The correlation between age of entry and school progress, worked out from individual cases by the Pearson formula, is .0115,"—an absolutely negligible correlation. "The striking thing," he says, "is the almost exact resemblance between early and late entering groups." Gesell writes, "The whole matter of school entrance is in the last analysis one of hygiene. Instead of unceremoniously and haphazardly admitting three millions of children and failing one fourth of the first graders at the end of the first year, we should gradually reorganize the kindergarten and primary school in such a way that the school beginner will be under systematic and purposeful observation."

In this grade a morbidity record is especially useful. It should be taken early in the year, in the interests of health defense, and also for the sake of accuracy. The mothers who insist that whooping cough is bronchitis, and that Johnny did not have mumps but that his glands were swollen are numerous. They give a truthful statement *before* epidemics start, but can not always be relied upon when one is in prog-

ress. With the record, the teacher can see at a glance, when an epidemic threatens, how much inflammable material lies in the path of the conflagration. False suspicions are corrected in the case of whooping cough, measles, or scarlet fever suspects, a second attack being unusual.

These children have, so far as my experience goes, an unusually clean record. Of the 20 girls,

10 have had measles
9 " " whooping cough
6 " " chicken pox
1 has had mumps

Of the 22 boys,

13 have had measles
6 " " whooping cough
5 " " chicken pox
3 " " mumps
1 has had diptheria
1 " " scarlet fever

To summarize the record in another way,

9 children have had none of the 6 diseases
19 " " " one " " " " "
6 " " " two " " " " "
8 " " " three " " " " "

I am sorry not to be able to give the mental age of these children. Only 24 have been tested, the Stanford revision of the Binet-Simon tests being used. The tests, so far as given, show a close grouping, mental ages ranging from 4 years, 10 months, to 8 years, no months. The I.Q.'s range from 80 to 128. Terman gives the mental ages found in this grade as ranging from 4 to 10. The Binet-Simon tests measure beautifully what might be called "fitness to receive instruction." This makes them extremely valuable as an entrance test.

Three children, however, shown by the tests to be normal and meeting all the physical requirements, are making no apparent progress in reading, the chief subject taught. This may be the fault of the teaching. The teacher naturally prefers to think that three factors determine school success or failure, physical development, "intelligence," and the unknown X.

In the group being considered, at least 4 would attract the attention of a mental hygienist. They represent some of the ordinary problem cases that intelligence tests do not bring to prominence. One is a large, handsome girl, abnormally shy. She refuses to accept privileges that are generally coveted; she will not take part in the games; she is loath to

leave her seat. When attention is directed towards her, her expression is one of silly, helpless embarrassment. She seems to enjoy working alone at her desk. A second girl is self-conscious and easily confused. She is eager to volunteer, but vague as to what she is going to do if called upon. Her impulses and efforts seem to fade out quickly, leaving her stranded. She is painfully eager to please, but so easily distracted that she does not see things through to completion. A boy is shallow-pated and excessively garrulous. He tries to follow me about, pouring forth a continuous stream of chatter. These three are only children.

The fourth child is high-strung, hypersensitive. When reading he quivers all over with a continuous tremolo movement. He fidgets when he recites. His older brother had the same nervous habits. Both are bright, attractive children. This boy at 4 seemed much more normal than he is now. Perhaps he has caught his brother's tricks by psychic contagion.

This analysis of the raw material collected in one first grade room may seem too fragmentary to be summarized. Theories blend beautifully into a composite whole, but facts are known to be stubborn things. A primary schoolroom fairly bristles with facts.

CORRELATION OF THE GRADES IN PRACTICE TEACHING RECEIVED BY SENIORS IN A COLLEGE FOR TEACHERS, WITH THEIR SCORES IN THE THURSTONE GROUP INTELLIGENCE TEST

By Hazel E. Cooper

According to David P. Page, first principal of the State Normal School at Albany, there were three stages of opinion with respect to fitness for teaching. For many centuries it was believed that all scholars could teach, since learning was monopolized by a few who were necessarily teachers. Later it was observed that teaching power was not shared equally by all scholars. The difference was attributed to a high or low degree of skill, so methods came to be compared, and a standard sought by which they could be tested. Finally the general principles or laws of psychology, physiology, or ethics became a criterion, and the science of teaching emerged. It was recognized that teaching ability involved several factors. People realized that, as Francis Ball Pearson graphically stated it: "All are school teachers who can secure licenses or positions, but they can not all teach school."

Numerous attempts have been made within the last fifteen years to investigate and reach, if possible, a better description of the factors contributing to teaching efficiency. The earlier investigators, among whom are H. E. Kratz and W. F. Book, attempted to do this by soliciting the opinions of pupils about their teachers. Other investigators have tried to gain information from superintendents and principals about their teachers. Attempts have been made to define scientifically the qualities that determined efficiency in teaching. One such attempt, conducted by Professors Reudiger and Strayer, asked principals and supervisors to rank their teachers in the order of general merit, and then to rank them upon eleven items arbitrarily selected by the investigators.

Professor Edward C. Elliott devised "A Tentative Scheme for the Measurement of Teaching Efficiency," in which the total efficiency was rated at one hundred points, each quality being assigned a certain number of points. His objective was "the analysis of the work of teaching into its basic components, and the analysis of the workers in teaching as to their posses-

sion of basic qualities and capacities." A. C. Boyce put Elliott's tentative scheme to the practical test by mailing it to superintendents and principals with instructions that they mark teachers by relative position.

F. L. Clapp asked a number of high school principals, superintendents, normal school presidents, college professors, and teachers to name in order of importance the ten most important factors of personality. One hundred replied, sending nine hundred seventy-eight items grouped under ninety-eight heads. The ten items most frequently mentioned were selected, and a few representative school men were asked to rank teachers according to those items, and also to rank them in terms of general personality and general merit. Each superintendent was to rank only the six best teachers so the results might describe a select grouping although it was possible that the six best in one system might not be better than the six worst in another.

In all of the investigations mentioned above, the qualities of the successful teachers were studied. S. H. Little and Miss Moses investigated causes of failure, the former among grade teachers and the latter among high school teachers. The superintendents and principals were asked to give the reasons for failure of teachers. The results of both studies when compared with those of Reudiger and Strayer, and Boyce were found to agree quite closely. In these, as in all the investigations, the attempt to secure a well defined standard was complicated by the different standards employed by different school superintendents, by the difference in relative value placed upon various items used to indicate teaching efficiency, and by the difference in ability of those who did the rating to distinguish between these items.

At the same time that some of these investigators were endeavoring to discover a standard of teaching ability from measurements by personal opinion, others were trying to derive a standard to describe accurately the accomplishments of varying groups of children and thus test the teacher by the product. One way of doing this was by the method of formal examination. Monroe and Bagley believed the results of such an examination inaccurate, although the latter thought that by improving the technique of the examination question by adopting a more elastic scale of grading than the numerical system they would be more effective. Monroe advocated the use of standardized tests in various subjects such as arithmetic and spelling. Such tests, he stated, would be more accurate for more efficient results could be attained when one had a definite aim to work for and an instrument for determin-

ing from time to time how much had been accomplished. The various methods described were used in attempting to define more exactly the "best" teacher. The importance of the investigations varied, but all served a common end in that material was collected and the way for future investigations pointed out.

Our purpose in the investigation here reported was to go a step further and to discover the reliability of the use of an intelligence test as a means of solving the problem. In order to do this we have attempted to make use of the degree of correlation between success in practice teaching, based upon grades received by seniors in a college for teachers for the first and second semesters, 1920–1921, and the score received by those same seniors in the Thurstone Psychological Examination.

It was a requirement at this college that each senior do practice teaching in one subject for at least one semester. Each pupil-teacher was given a grade of A, B, C or D at the end of the semester. The A's were few, being bestowed only for exceptional ability. No E's were recorded, for if the student-teacher exhibited extreme lack of teaching skill, the class was taken away from him. In order to secure justice for the person whose teaching ability was in doubt, more than one critic teacher watched him teach. The grade was then given in conference. Because the ratings were recorded in letters, not numbers, the correlation could not be made so accurately as it might otherwise have been.

As the use of a group test was desirable, and as language ability could be assumed, the Psychological Examination Test IV, prepared by L. L. Thurstone of the Division of Psychology, Carnegie Institute of Technology, Pittsburgh, Pennsylvania, was selected as the intelligence test. It was originally intended for college freshmen and high school seniors, but the results proved that it was not too easy for college seniors, although, of course, the average score for the group was considerably higher.

The test was administered in a large lecture room at the college on January 11, 1921, at four-fifty o'clock. The professor of education, an assistant professor of education, and the writer were the examiners. All the rules for giving the test were carefully observed. Promptly at the expiration of thirty minutes, time was called and the papers collected. One hundred twenty-four students took the test. The results of seventeen students were disregarded. Of these, fourteen had not done practice teaching and, therefore, had no grades to be used in the correlation; three began the test late, and one of the latter had asked questions during the examination.

The tests were carefully scored in accordance with the rules for rating.

As in every psychological test, the results were without doubt influenced to a greater or less degree by conditions beyond control. The mere fact that it was a group examination implied a certain amount of distraction caused by the slight movement of a neighbor, the rustle of paper, etc. The sound of footsteps in the corridor and noises from the street might have caused the attention to waver. These, however, would be minor distractions and their effect upon the results would be slight. Of somewhat more importance was the physical condition of the students at the time the test was taken. Some persons were fatigued after having had several classes, while others came to the examination unwearied. In the group as a whole, however, the number of students of high intelligence affected would be counter-balanced by the number of students of lower intelligence affected, so that while the general score might have been lowered, it may be assumed that the proportion of high and low scores would remain about the same.

The results varied from a score of 48 to one of 152, the median for the one hundred seven scores being 102, and the mean or average being 102.6. When the students were separated into groups according to the subjects they had taught, as in Table I, it was found that the medians for those who did practice teaching in history and civics and for those who did practice teaching in English were the same as those for the total group. The means of the groups teaching English, history and Latin differed from the mean of the entire group by less than three points. The median and mean of the group teaching physical education varied most from the median and mean of the total group. These facts seem to indicate that the median or average of the history or English groups would be strongly indicative of what the median or mean of the class as a whole would be, while the median or average of the physical education group would vary so widely that no inference could be drawn regarding the median or average of the entire group.

TABLE I

	Group	*No. in Group*	*Mean*	*Median*
1.	English (including public speaking)	20	104	102
2.	History (including civics)	13	100	102
3.	Latin	9	103	98
4.	Mathematics	17	113	110
5.	Modern language (French, German, Spanish)	12	91	87.5
6.	Physical education	10	86	91
7.	Science (including household economics)	17	107	104

In order to correlate the score of the one hundred seven seniors in the Thurstone group intelligence test with the grades received by the same students in practice teaching, Pearson's coefficient of mean-square contingency was used.

Diagram I shows the distribution of the correlated scores in the intelligence test and grades in practice teaching. Applying to this the formula for mean-square contingency, it was found that C = .216. This is a low correlation, but it does indicate that there is some relationship between ability to succeed in an intelligence examination and ability to succeed in practice teaching.

Grades in Practice Teaching	70-74	75-79	80-84	85-90	
A			1	1	2
B	1111	𝍸 𝍸 𝍸 1111	𝍸 𝍸 𝍸 𝍸 𝍸	1111	52
C	𝍸 1	𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 11	𝍸	43
D		𝍸 11	111		10
	10	46	41	10	107

Diagram I

In order to study more carefully the problem of discovering teaching ability, a further investigation was made. The marks of the one hundred seven students in all courses for which credit was given in the first three years of college work were examined and the average of each individual computed. These averages were correlated by means of Pearson's co-

efficient of mean-square contingency with the grades of the same students in practice teaching.

Diagram II indicates the relation between the record in practice teaching and the average of marks in all subjects for the first three years of college. Here C = .332.

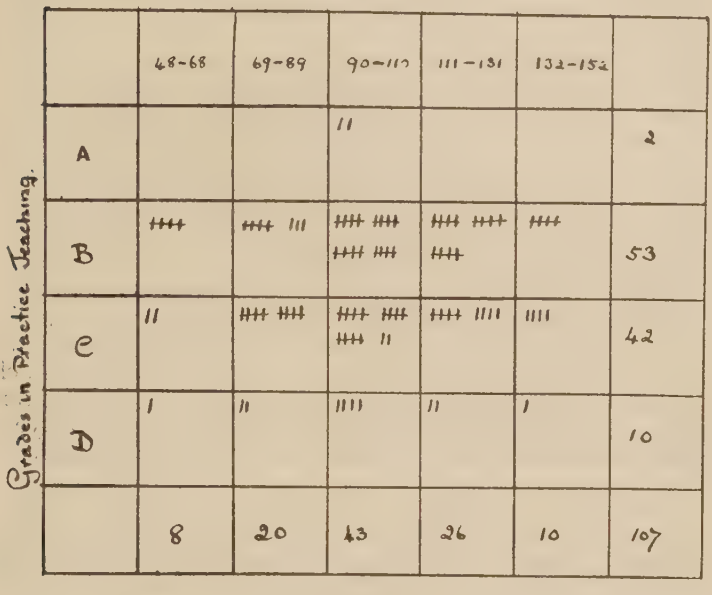


DIAGRAM II

Although the coefficient of mean-square contingency is higher than in the first correlation, the conclusion must not be drawn that, therefore, the student's marks during his first three years at college are a better criterion of his teaching skill than a general intelligence test. The coefficient is only twelve one-hundredths points higher than the coefficient in the first investigation, a difference so small that we can make no more positive statement regarding the correlation than in the first case. The small difference which does exist may be accounted for as due to accidental causes. If an explanation is desired, however, it is furnished by the fact that, although the marks were given in various courses not always connected with the subject the student would teach, still, aside from the definite subject matter required, many hints were thrown out in the courses as to the best teaching methods, and some

courses in education were taken in which preparation for teaching was the definite aim in view. It would be surprising, therefore, if the correlation between the general scholarship averages for the first three college years and the grades in practice teaching were not higher. The one was a definite preparation for the other. Then, too, the personal element might enter into the assigning of marks, while personal judgment would have nothing to do with the computing of scores in the intelligence test.

On the basis of these facts the results indicate that the scores in Thurstone's Psychological Examination have a positive correlation with the grades in practice teaching and, as suggested by the other correlation, is of *about* as great value as the average of scholarship records of the first three years at college. The coefficient of mean-square contingency, .216, which represents the correlation of scores in the intelligence test with the grades in practice teaching, points out a tendency, but cannot be relied upon to discover teaching ability. The other coefficient of mean-square contingency, .332, is little more reliable and simply points out again the fact that not all scholars are teachers. An interesting problem which is suggested here is whether the scores received by practice teachers in the Thurstone Psychological Examination have a positive correlation with the grades received by their students in the Regents examinations.

If we refer to Diagram I, we find that four of those who received the lowest score in the intelligence test received a grade of B in practice teaching, while four of the seven having a score of 132 or more in the intelligence test received a grade of only C in practice teaching. From this it can be seen that Thurstone's Psychological Examination cannot be relied upon to discover teaching ability. Intelligence tests, however, are in their infancy, and it is possible that in the future a test will be devised which will be a better criterion for teaching skill than scholarship records. Such a test will need to be definite, economical of time, and capable of furnishing exact quantitative measures. Little opportunity for personal judgment will be offered, and the results will be uniform. Since teaching ability depends not upon one but many factors, it will test the various qualities combining to produce teaching skill according to their relative importance to the product.

THE VIRGIN BIRTH

To Dr. G. Stanley Hall.*

Dear Sir:

I have been young and now am old, but have always allied myself with the church as my parents and grandparents, and their forbears for the last nine generations which we can trace, did; and for more than thirty years I have been a vestryman, although my business has demanded most of my time and energy. I have had, as I maintain everyone should have, a secondary outside interest or avocation. This minor zest with me has been popular biology and psychology. In these domains I have, in the course of years, collected quite a small library, and have even found time to read a good many of my books, and the few journals in this field for which I subscribe.

Although I read more on Sundays after church than at any other time, it never occurred to me that there was any special relation between the above subjects and anything connected with public worship, any more than there was between either of them and the conduct of my business. I had, of course, often heard and read of a conflict between science and religion, but they never interfered with each other in my own personal experience. Two of my sons graduated in technology and are with me, and one of them is now a member of my firm. Their education, so far as I observed, had no effect on their allegiance to the church, which most of their New York relatives attend as they do. My third son, however, persisted in taking humanistic courses at Harvard—which I regretted, as these did nothing to qualify him to enter the technical business I inherited—but he came home a sceptic in religion and a free thinker in social matters, with very upsetting ideals about the industrial order and what not, and I yielded reluctantly to his wish to study law.

One day some two years ago, our Rector, a very learned, eloquent, pious, and beloved man, preached a sermon which I shall never forget. It was on the clause in our Creed which

* It was with considerable difficulty that I induced my long-time friend, with whom I have often conferred on such topics, to set down this account of his "Pilgrim's Progress," concerning this venerable dogma of his church, and it was with still greater reluctance that he at last consented to the publication of this letter.—G. S. H.

I had repeated from my infancy, "conceived by the Holy Ghost and born of the Virgin Mary." He said there was a large body of clergymen and laity in our communion who did not believe in the Virgin birth of our Lord, and set forth in a most scholarly way arguments from both Scripture and science to show that this article of the Apostle's Creed need not and could not be taken literally. I was not so shocked as some of my fellow church members were by this discourse. Indeed, I have always taken some pride in being open-minded to all new suggestions. One must be so in business—why not also in matters of faith? I now realized as never before that my biology and my Creed seemed to be at variance on this point, and I began to wonder if and how they could be harmonized. The more I meditated the more difficult the problem seemed, and my interest in these themes grew apace. I spoke of the matter more or less incidentally to several of my friends. It seemed to have troubled none of them very deeply. Most thought it a holy mystery, which enjoyed a unique and privileged immunity from intellectual scrutiny, while a few thought it an unfortunate survival from ancient times, which should be allowed gradually to lapse from Christian consciousness into "innocuous desuetude," and my junior partner, who was a sceptic, thought it preposterous and absurd.

During the next year I had several brief talks with my Rector about it, but it did not seem to be a pleasant topic for him to discuss. He appeared to me to take refuge in mystic phrases, and I could not find out exactly what he thought about it. As my own interest grew, I finally concluded that he had reservations on the subject which he did not wish his vestryman to know. Still the problem rather haunted me, although I sometimes even tried to banish it from my mind by raising the question whether it was a perfectly modest theme to occupy the thoughts of a man as virtuous in heart and life as I have always been. Nevertheless, I did consult the Carnegie Public Library, not far from my home, and read a good deal selected from hundreds of titles bearing on this subject.

As a final result I came to fear that I must, and resolved that I would, try to make up my mind on the subject, and so I started in my plain, common sense way to think it out for myself. The following is a plain record of this process and its results so far.

1. I had just found and read a very learned book by Otto Rank on the birth of heroes, in which he tells us of many famous men of old, who were later thought to have been sired

by gods. Not only Jove, but many other ancient deities consorted with the daughters of men, and many demi-gods and goddesses sprang from such unions. If the men felt jealousy, they rarely showed it; possibly they were afraid to do so. Some maidens were proud of it or seemed to be. To have a bride or a bride-elect also selected by deity made the lover sure that his estimate of his chosen one was not excessive, as that of lovers often is. Sometimes goddesses wooed men, but far more often it was the father who was divine and the mother human. These amours between celestial and terrestrial beings were generally made no secret of. Indeed, mothers were often proud of them, and sometimes claimed divine fatherhood for their children when they knew better, while a few very credulous and fond maidens were betrayed by being made to think their seducer was a supernal being. Often these consortations occurred but once, and the mothers were usually virgins who were sometimes forced or carried off. Some maidens yet romance about a heavenly or super-fairy prince who might possibly sometime come for them under this or that disguise. The old belief in such possibilities certainly fructified the imagination. Perhaps there is an ecstasy in which each lover seems divine to the other. Moreover, there are sometimes solitary and purely spontaneous raptures, which it is natural enough for young innocents to interpret as divine visitations.

So much I got from my reading along these lines. It showed me that if we once depart from the conventional view that regards the annunciation as a holy and inscrutable mystery, we must face such questions as these in a sane, sensible, and matter of fact way.

2. Next I read three articles, suggested by a medical specialist and friend, and then a number more referred to in these. This gave another, to me, new idea. It seems that young people of great talent or genius, but of humble origin, often pass through a period of revolt toward their parents, and may even come to feel that they so far transcend them that they must have had other and superior parents, at least one. In a mystic age, when such views as the above were prevalent, if a youth had once attained the secret conviction that he was far superior to his pedigree, he might, and often did, grow cold toward his father, and perhaps also toward his mother, even fancying in his secret reveries—that grew strong by repeated indulgence in them—that he came from a superhuman stock. This tendency would be all the stronger in an age when heredity and not environment or personal effort is the chief basis for the distinction of individuals from

those about them, or when birth, not nurture, is the chief ground of eminence. When at the age of twelve Jesus ran away from home and was at last found in the Temple discussing high themes with the learned doctors, and reproached his mother for not realizing that he must be about his father's business, he did not by this mean carpentering, but showed by his answer that he already felt he had a divine mission and a heavenly origin which ignored Joseph; and when Peter gratified one of the dearest and most secret wishes of Jesus' heart by confessing him a son of the living God, and all present were charged to keep this a secret, it could only have been because, although convinced himself, Jesus thought the time had not yet come when the people would confer upon him this highest honour which the folksoul could give its favourites. He was fully convinced himself and had long been so, and no mortal that ever trod this earth ever merited this honour or diploma of greatness as much as he did. Thus, there can be little doubt that from early in his career, and perhaps from early in his life, he reached the plenary conviction that he could not be the son of the decrepit and inconsequential Joseph. Many sceptics since have held this view. But bastardy meant to the Jews, who were very exiguous on all these matters, disparagement for himself and still more for his mother, and we have no record that any contemporary ever thought of any other earthly father for him.

Psychologists give us another and very plausible explanation of just how Jesus came to think himself the son of God. This line of thought, although it is more difficult for us to understand, runs somewhat as follows:

3. When a man feels himself far above all those about him, and far ahead of his age, and when his faculties are in the state of exaltation in which so much of Jesus' life was spent, as scholars now tell us; especially when very unusual faculties flower early and independently of environment and even of education; and life is impelled straight to a lofty goal so that there needs to be no reconstruction of it or change of direction, such as is implied by conversion; the only explanation of all this is that in seeking the origin of greatness the mind comes back to the initial momentum of life and there finds the *fons et origo* of everything distinctive. Moreover, Jesus very probably felt that his ideas and his life were such as would have marked that of Yahveh himself if he had come to earth and taken on human form, and with this we may heartily agree. He was the embodiment of the man ideal and archetype. If we believe that, it is enough, however he may have secretly romanced about the fact and its cause. He felt himself to be a member of a higher order.

It is, however, most unfortunate that again today the question of his literal spermatic sonship has been brought to the front. It is not only materializing, but it shows a lack of realization of the spiritual truth embodied in this symbol. If we had only once known and felt its meaning, we should never have lapsed to the crass plane of interest in a biological absurdity, which is only a stumbling block to the true faith, and flies in the face of all the divinely ordained laws of nature. To the scientific mind of today it is utterly impossible and absurd. No intelligent, or perhaps we may add no ignorant, man or woman ever did or could wholly believe it in the sense of attaining complete conviction. This would involve some conception of how it did or could occur, and this lands us in the "jungle of the preposterous." In this sense, belief in any accepted sense of that term is such a psychological impossibility, that to think we believe it or to try to force ourselves to do so by an act of the will to believe, is self-stultification.

4. Still another viewpoint is unavoidable if we have the courage to face reality here and not to fly from it. Fertilization has its limits. The common definition of a species is a group of creatures, between the individuals of opposite sex of which fecundation can take place. The *genus homo* is not fertile with any species of animals, even the higher apes, so that cross-fertilization thus has its limits. Now gods and men belong to different species, if not to different *genera*, and so they cannot impregnate each other; but, what is far more important yet is the fact that if they were near enough to each other in the hierarchy of life to be able to do so, the offspring of such unions would not be so very much higher than man as he is. A super-being, as far above us as we are above the highest animals, could not beget sons of human mothers, although he had all the physical parts necessary to do so. Thus, in fine, a lofty deity could not become the father of human children; and one not too remote and above us, if he did so, would produce offspring not so far above the best specimens of the ungrafted human stock. These considerations could not be omitted, for they would obtrude themselves upon every candid mind that once opened itself to enquiry; but this thought is unpleasant to pursue, and so we leave it, pregnant as it is of further suggestions.

5. Finally (and this is by far the most important consideration), this article of our Creed I have called a symbol (as indeed all creeds were once called), and so it is, but of what, and what is a symbol?

The Jewish Godfather had been exalted by the prophets

until he was deemed omnipotent, omniscient, eternal, perfect, and vengeful if man violated his laws. To see his face was to die. He created the earth and all that is, also the heavenly bodies, out of nothing. He was first a god of nature and then of righteousness. In Jesus there is little or nothing of this *numen tremendum* of Sinai; in Him divinity is as it were smalled down to human dimensions. He is the archetype man as man was meant to be. Love in his disposition is prepotent over justice. How could the Yahveh of second Isaiah beget the Jesus of the Gospels, so unlike himself in body, soul, temperament and purpose? Sired by such a sublime divinity we should expect paternal to be very prepotent over maternal traits. In fact, the reverse seems to have been the case. Art and the oldest traditions and concepts have always given Jesus' form and spirit a more or less feminine caste. The moment we have the courage to face the facts we cannot avoid considering the biological laws of heredity here, and we find a conflict, which can be resolved only by an act of faith that stultifies our knowledge, or else by realizing that the stupendous miracle here involved is no miracle, because it is not a literal fact but only a precious symbol.

Finally, all these troubles vanish, and in their place comes a happy sun-clear unity of faith and reason, when we once understand the ultimate meaning of this hallowed symbol. It is as follows:

6. Man is so made that he tends to objectify the great majority of his impressions. The infant, and the blind suddenly cured, have to learn that retinal impressions must have a reference outside themselves. The same is true of hearing and the other senses. Our primal knowledge of all objects in the external world is, at bottom, simply the impressions they make upon our sense organs, and from these essentially subjective data we construct our external world by projection. Thus, we early and instinctively acquire the habit of what is called the "extradition of consciousness." It was Berkeley who first taught the modern world that things have no essence save the act of perceiving them. Everyone builds his own outer world by externalizing the manifold impressions made upon him. Thus, the subjective idealist may even come to doubt the reality of everything outside his own ego, and, like the Hindu philosophers, call all outer things illusions. True insight to them thus means the resorption or calling back of the universe into the self, or conceiving nature as the projection of some divine being or essence, which will one day revert to its source, when God or some other primordium will be all in all.

Now whether these ideas have any validity concerning any kind of involution countering or following evolution, does not concern us here. What is in point is that these processes do occur and are the most profound in the field of culture. Man dreams, and then, on awaking, knows that it is all and only a dream. He spins the world over with myth, and later realizes that these are made warp and woof of mind-stuff. He has made deities galore—Indra, Persephone, Ea, Rhadamanthus, Jove, Odin, Thor, and so forth, and later has come to realize that all of them are only his personification of forces or phenomena of nature or of human qualities or values. He has pictured with the most realistic details heavens, hells, pilgrimages of the soul after death, judgment days, and so forth, and then comes to see that all these, too, spring from his own soul; so that, as Berkeley said of physical things and forces, their *esse est percipi.*

These processes of inwardization and the epochs marked by it are most stimulating and fructifying. They constitute a renaissance or rebirth. They give man a new sense of the fecund energy of his own spirit. These experiences mark a kind of joyous harvest homecoming of the individual or of the collective soul to itself. What had become alienated and rigid is revoked and fluidized, or, in more technical terms, what was "heterized" undergoes at-one-ment. This process turns us from the objectivities of life, never so obsessive as now, to inner verities. Its very slogan is the word "inwardization." Owing to the projective habits of the senses, man has to put great things outside himself and to estrange them in order to thus give them their right proportions and perspective; for the outer world is bigger than we are; and also from it comes not only images but our very words, which make it possible for us to commune with each other about our experiences.

From these broken phrases we can glimpse the pregnant meaning of the Virgin Birth. It signifies just this resorption of all objective realities, which have emanated from the human soul, back again into it. God and all supernormalities are aboriginally in us. They arose from, and live, move, and have their being in the inmost depths of our own nature. It is faith and faith only that created and sustains them, and they are its supreme creations. They are its highest product, and at a certain stage necessary idolatries—but idolatries they are one and all. The annunciation calls upon us to realize all the momentous import of this process. The only living and true God is not in the heavens but in mansoul, and to fully grasp this idea is the most wondrous of all new

births. It shows us that despite all our sins and errors, and beneath them all, there is a sound core, not only of righteousness and truth, but of spontaneous creative energy; and it also calls men to their own true vocation of realizing this process not only in their words but in the conduct of their daily lives. It teaches us that there is no heaven save that which we can achieve for ourselves by glimpsing and living out the best and deepest impulsions of our own psychic constitution.

Thus, this crass old article of faith "conceived of the Holy Ghost and born of the Virgin Mary," is transfigured and stands forth in a new light. God not only comes to, but is one with, man. The duality between the powers of good and those of evil is in man's own soul only, and however bitter the conflict, good will prevail; because in the processes of making the mind itself, more of the best traits have survived than of the worst. Thus, we can now see that the only conflict between those who insist upon the literalness and historicity of this item of our faith, and those who deem it only a symbol, is between those who see the transcendent truth that shines through it, and believe with the head, and those of another temperament who believe predominantly with the heart.

Why should they quarrel when, after all, it is at bottom only a question of what psychologists call the "organ of apperception." Now centrifugal, now centripedal, tendencies predominate in history and in individual lives, like the systole and diastole of the heart. Whether one or the other is stressed is not so much a matter of phases or stages of culture, or even of degrees of development, as it is of innate diathesis; or, to use another psychological term, it is a difference between the "introjective" and "extrajective" type of mentality. The main thing is the sense of the significance of it all, and all have this, each in his own way and in various degrees—some more, some less consciously. Some feel it deeply, and to others it comes in a more noetic form. Even were it a question of different stages of development, or of intellectual grasp and insight (it has even been suggested that to ask each Christian briefly to state his belief in this doctrine and its ground would be one of the best bases for determining his I. Q. or his psychological age), there is nothing to quarrel about any more than there would be between the child's view of the world and that of an adult.

The central thing, to reiterate, is to have the epoch-making expansion, or at-one-ment, to realize that the transcendent is the immanent ejected from us, or that for God to become man means that man also may become divine. A child of ten may better appreciate its parents' Christmas bounty,

because it had believed in Santa Claus at the age of six. When I first heard the plays of Hamlet and William Tell I believed both these characters were historic. Perhaps this impressed their lessons better; but their uplift was not diminished but enhanced later when I learned that both were myths, spun by the folksoul, and elaborated by individual geniuses.

So, I believe in the historic Jesus, but I have now reached the stage when, if he and all he said, did and was were proven to be mythical, I think that it would all mean the more, not the less, to me.

So I will not be excommunicated from the ways, forms of worship, or even the phrases of orthodoxy because I have glimpsed sources of belief and even consolation, which are to me so much stronger than those I once cherished, that I can get along without any historic materialization, but feel that all the content of my early faith has not only been conserved but confirmed. Why, then, are we so prone to forget that Christianity is not a doctrine but a life? It opens a realm of doing rather than knowing, or, better put, the former is the organ of the latter and not conversely. If my character and conduct conform to the Christ pattern, I am a Christian whatever my belief or doubt. Hence it is a sad sign of sterility and senescence when churchmen haggle and bicker about such "splendid preposterousnesses" as the Virgin Birth of one obscurely born two millennia ago. It is a craven flight from the present pressing reality of how to live, love, and help others, to take refuge in these exiguous problems in the field of a metaphysics of biology which does not exist. We have to restore the ravages of war, to check social and industrial discords, to promote moral health in communities and in the nation. In such a situation such remote discussions suggest the altercations between Don Quixote and Sancho Panza, or at best the scholastic subtleties of the Middle Ages, rather than active campaigning against real evils in the world, to which the church is now called perhaps more loudly than ever before. The young particularly need its care. So, serious discussions upon such a theme in such a time can only provoke scorn and derision by those outside.

Those of artistic temperament will always demand literal objectivity for their beliefs, while rationalists can believe without sight. The former must have an outer and personal deity which the latter will always regard as idolatrous. The former need to believe in miracles as historic and scripture as literally inspired and interpreted, while the latter regard both as more or less mythic or metaphorical—or, to change the figure, like paper money which they are not content to use

till they have cashed it in the specie of spiritual meanings and values.

When what we deem outer facts and verities are seen to be solely inner ones, a sense of exaltation or a *Magnificat* mood is inevitable. We glorify anew the god found within, and no human experience is so fecundating. The Virgin Birth is a masterpiece of symbolism, a felted mass of analogies between outer and inner, which should be traced out in all their subtle ramifications and connotations. If science, art, or literature can give us a better expression of the great power of this resumption *motif* and experience, let us have it. Meanwhile, we should bear in mind that liberals who can, and do, thus interpret it have most and best reason to cling to the old symbol.

For myself, I claim the utmost freedom, and want to see the complete mobilization of Christian faith up and down the scale of interpretations. It is essentially only a question of the degree of sublimation of verities, identical in nature, and differing only in form. It is bad taste to dispute about taste, and in the deeper psychological meanings of that term that is all that is involved.

Christianity calls us to a new life, a deeper love, a broader charity, and an ever more helpful service. Must not the true Christian, who wants above all things to lead a better life to exemplify the spirit of the Master, and who has hitherto looked to the church for help in so doing, cry out from the depths of his soul, "a plague on both your 'parties'." Let us get out of the murky air of the church observatories, and go out into the open, and look up again at the eternal stars, although for us here as for Kant the new awe-inspiring heavens are found within the human soul.

As I read over the above paragraphs, I am astonished at my temerity in invading this field. I shall be called a fool for entering where only wise men, and nowadays not many of them, dare to go. But the Bible intimates that truth is sometimes revealed to babes, that is hidden from the learned.

But I think it is time common sense should be heard from, and of that I would fain believe I have a fair endowment, with even a little power of intuition. I confess I have used some phrases I am not sure that I quite understand, and so have perhaps misused them, but it is the best I can do to express a very deep conviction that I do glimpse the truth, if from afar. I am heartened that you who are a psychologist, and whom I asked to read and revise my manuscript, have suggested but few changes in it, have encouraged me to let it appear in print, and have even said that, although you

would have expressed it otherwise, especially in certain parts, you are in essential agreement with it. I sincerely trust that it will not alienate my friends, or even shock my Rector, to whom I shall send a reprint first of all. I long hesitated about signing my own name to it, but feel that I ought to do so.

Very truly yours,

MORGAN C. STURTEVANT.

BOOK NOTES

The Psychic Health of Jesus. By WALTER E. BUNDY. New York, Macmillan Co., 1922. 299 p.

The author of this book, a professor of the English Bible at De Pauw University, is a bold man. Not only is he not a psychologist or a psychiatrist, but he enters a field which most students of the Bible have ignored, if not tabooed, though he has made a very valuable contribution to the knowledge accessible to all English students of Jesus. He states the arguments of those who have thought Jesus abnormal very frankly and often in the author's terms, and tries to meet them all candidly with no appeal to either what has lately been called the "sneer" or the "drool" method. Thus, we have here a plain and simple statement of a case which most Christians, especially those who read only English, never dreamed to have existed. But even from the standpoint of orthodoxy the author has made a very valuable contribution, and, what is far better, he has, we think, pretty well made out his case that Jesus was eminently sane and normal. He has given us a book which every clergyman and indeed every student of the psychology of religion ought to read and ponder, and we sincerely hope that his laudable effort will not be censured by ostrich-minded churchmen.

Indeed, this work is so commendable that it is rather painful to point out its shortcomings, and we will only designate them briefly as they impress us. First, psychoanalysis has opened up many of the problems here treated in a new and larger way than the author quite seems to realize. Secondly, we do not think he sufficiently appreciates the eschatological lines of work which culminated in Schweitzer, and which have a vital bearing on his problem. Thirdly, ideas of sanity differ immensely in different ages, and sanity in Jesus' day meant a very different thing from sanity in our own. Nor do we think he quite does justice to the vastly greater range of superior minds to which very many phenomena are perfectly normal, but which would be infallible stigmata of degeneration in minds of a lower order, and finally—this applies especially to the state of exaltation (Holtzmann)—which are probably far more common as special experiences, and indeed may be found more continuous for months and years, in great than in little souls. Should not the author, too, have recognized more fully Hall's book which preceded his by some five years, and which covers much of the same ground, although from a very different standpoint, with which probably the author has little sympathy.

The Story of a Great Schoolmaster. By H. G. WELLS. New York, Macmillan Co., 1924. 176 p.

The author came to know Sanderson of Oundle in 1914, and as a result of the interview sent his sons to his school. When Sanderson took it over, it was small and almost unknown, but in nearly half a century he made it one of the best known schools in England. His personality, "ruddy and jolly," gave little hint of the intense life within him. Although his only education was in a parish school and later in Durham University, where he gave himself to theology and mathematics, and later still at Cambridge, where theology dropped out, he was after all largely a self-made man, growing from year to year. He became intensely interested in Huxley, Darwin, and Graham Wallace, and accomplished the great task

of harmonizing the new with the old views. His school flourished, and needless to say he was the heart of it all, inspiring his teachers as well as his pupils. Most of his ideas were innovations, and this drew to him the sons of progressives of many sorts. Religious instincts were dominant through all. The record of his school during the war was exceptionally brilliant, and he died with the idea of a house of vision which should contain the portraits of all the great men of all ages, and pictures and records of great deeds, where young people could meditate and orient themselves to life. His intense enthusiasm and ceaseless activity were an inspiration.

On laying down this enthusiastic tribute, however, the reader cannot help feeling that, although the author has in the character and life of this man found a very worthy object, his enthusiasm for its hero has been slightly exaggerated; for we believe the history of recent education has afforded other examples of growth and achievement quite as remarkable as this.

The Psychology of Laughter and Comedy. By J. Y. T. Greig. New York, Dodd Mead & Co., 1923. 304 p.

We have here the most important contribution to this general subject since Sully; and a very fresh and breezy discussion the author gives us on such subjects as the laughter of infants, love and laughter, the sexual, comic treatment of vices, satire, humor and wit. If the style is somewhat journalistic, it nevertheless touches and sheds light upon nearly all the chief problems connected with this subject. Very fair and, on the whole, convincing is his analysis and criticism of the Freudian theory of wit. The author does not seem to have given as much time as it deserves to the physiology of laughter, and we think there should be an ampler background of discussion about pleasure and pain, and comparison between laughing and crying. Perhaps we are wrong, but, to our thinking, a field so large, so rich, and unexplored, could best be entered by the far more tedious and laborious method of collecting a vast body of laugh-provoking events and sayings, and trying to group these into classes and those giving the broadest inductive basis to the pyramid. We think this would be more hopeful than the present method of minutely analyzing a few striking illustrations. This work is generally rather boresome, and a fully explained joke loses its flavor.

The Foundations of Personality. By Abraham Myerson. Boston, Little Brown & Co., 1923. 406 p.

This volume by a practical physician of the mind, who "seeks to analyze fundamentals of personality, avoiding metaphysics as the plague," gives us here some very interesting discussions on the organic and evolutionary basis of character, on memory, habit, stimulation, inhibition, hysteria, instinct, emotion, will, intelligence, interest, love, pity, duty, patience, the wish, anhedonia, the leader and the follower, sex characteristics, play, disharmony, some character types, and many other topics. The style is direct and lucid, the topics are analyzed from the rather broad basis of actual experience with cases and observations from life, and on the whole the book is an important contribution to a most timely topic; for, as the writer says, a large part of human interest centers on the discussion of character — is the customer honest, the pupil bright, the lover true? Is there endurance, honor, and so forth?

At several points we should like a little more recognition of authorities. On page 133 et seq. the author gives us a very good résumé of Jung's distinction between extravert and introvert with a slight change of terminology, but, as we observe, with no mention of Jung. True, many

before Jung, from Schiller to James, have recognized a distinction along similar lines, but Jung has made it classic. We would also like to see a little more acquaintance with the history of character study than appears in this volume.

The Foundations of Psychology. By JARED SPARKS MOORE. New Jersey, Princeton University Press, 1921. 239 p.

The author attempts to give us here a philosophy of psychology, and the book is written throughout in the assumption that he is thus conferring a great service, if not an honor, on psychology; whereas there are those who believe conversely that the time is at hand when philosophy will reveal its chief value as material for psychology, and that the latter is far better equipped to explain the former than *vice versa.* There are even those who believe that, as of old physics was warned to beware of metaphysics, so psychology should beware of philosophy. But this author is of the opposite opinion—hence his volume, which might almost be called a development of Münsterberg's views. Rational and empirical psychology, spiritualism, materialism, dualism, monism, the faculty psychology, and associationism, structuralism and functionalism, behaviorism and introspection, self psychology, the classification of nature, of science and its hypotheses, theories of meaning, the true personality, parallelism, cerebral theory, the subconscious (which, by the way, is self-contradictory, futile, and credulous), and many more things are explained, and not a few rival and contradictory theories reconciled, while psychology here is told what it really is and means, can, and cannot do. The book is able, but hypermethodic, and in the opinion of the writer a treatise that should be very carefully prescribed for advanced students, because very dangerous for those inclined to armchair, instead of experimental and observational, methods.

Human Efficiency and Levels of Intelligence. By HENRY HERBERT GODDARD. New Jersey, Princeton University Press, 1922. 128 p.

In these lectures Professor Goddard, after the briefest sketch of mental measurements, sets forth the boldest practical utilization of them that has anywhere yet been presented. He wants every child tested on entering school and at various intervals later, until his mental level has been definitely fixed, and since this, once established, can never be changed, he must find not only his vocation but his sphere of life in the level for which his abilities fit him. Democracy can never be firmly established save on this foundation. Its troubles are largely due to the fact that inferior individuals do not know their place, but want that of superior ones. This they often attain, but are always unhappy, and disaster is always inevitable. Thus, there must be classes, and he even thinks that those with ability in the lower ranks can be taught to be contented there. The very few superior minds will always influence those below them, and all they need is wisdom enough to pick a wise leader. In this way, although the intellectual level of the community is only the mental age of thirteen, democracies may be saved. As an after-thought he adds in a preface that he recognizes that mental tests are not all perfect, and before we can place implicit confidence in them we must be able to grade, as we cannot yet do, will-power and emotional capacities. On the whole this is a most stimulating book.

A Plea for Monogamy. By WILFRID LAY. New York, Boni & Liveright, 1923. 305 p.

This, we believe, is the fourth or fifth book appearing on psychoanalysis that this voluminous author, who draws chiefly upon his own experience

and observation, has written in recent years. The fundamental thought here is that complete marriage of body and soul, involving "homogamy," is the ideal to be striven for; that marital unions should be, in every case, led up to by more or less prolonged courtships and progressive endearments, and that if this is done the physical attractiveness between man and wife can be prolonged in old age. These views, even the last, are not new, but they have rarely if ever been set forth with such details (details which may expose them to purist criticisms), and perhaps have never been so persistently reiterated. Our idea is that, on this subject more, perhaps, than any other, hints are sufficient; that it is unpedagogic to spin out themes too much, and that, therefore, the things really good and new in the volume might have been set forth in half, if not a quarter, of the space.

The Heretic of Soana. By GERHART HAUPTMANN. Tr. by BAYARD QUINCY MORGAN. New York, B. W. Huebsch, Inc., 1923. 192 p.

This is a story of a very devout young priest of a village high up in the Alps, who, learning that there is a degraded man and his sister wife living in incest, squalid and actually lousy, far higher up the mountain and very isolated, decides that it is his duty to visit them and, if possible, save their souls. The man is well developed physically, but almost bestial, and the priest cannot understand him. The woman he can communicate with. He finds to his amazement that they are and come from a long line of ancient, if not pre-historic, phallic worshippers, have the unspeakable symbols of this cult, abhor everything pertaining to the church, and will not join his congregation. They do, however, consent to attend a service for them alone in a little chapel nearby. On the way home he meets a very young shepherdess, a paragon of beauty, innocence, and ignorance, tending sheep, and especially goats. She makes immediate appeal to him and as his interest in her grows the fervor of his church work is greatly increased. In the end he falls a complete victim to this daughter of the outcasts, realizes that his life before has been a mean, shallow thing—a mere shell, he calls it. He cares nothing for the scandal that makes them outcasts, but they live for each other, and, in a prelude which should have been a sequel, the author meets a saintly and beautiful man and woman and their children, abhorred by their neighbors as worshippers of the devil, who are really the priest and the girl Agata. The book throughout is fairly crammed with sex symbolism. As a work of art it is very remarkable, but what about the morality of this greatest of living German novelists in this instance?

Phantom. By GERHART HAUPTMANN. New York, B. W. Huebsch, Inc, 1922. 224 p.

This psychological novel strangely suggests Dostoievsky. A poor young clerk develops literary, and especially poetic, aspirations. He falls in love with the thirteen-year-old daughter of a very rich man, having obtained her picture; and he finally calls on her to ask her parents' permission for him to become her suitor, posing as a genius and author who is on the verge of becoming rich and famous. They evidently think him mad and get rid of him. The descriptions of this—his first love—are detailed and ideal. When with a confederate he imposes on a rich but depraved aunt who gives him money, he falls in love with another very young and beautiful but utterly abandoned girl, who is steered by a designing mother, who thinks him his aunt's heir. Now he sinks to the rôle of a complete imposter, full of illusions, plotting crime, and deceiving his mother. At last, with a group of other criminals, he helps to plan and execute a burglary of his aunt's great wealth, in which she is accidentally

killed. The arch-plotter and ringleader is arrested and executed, while the clerk is tried and given a six-year sentence. As he is going to jail a rather commonplace girl, whom he has known all his life, voices her belief in him, and pledges herself to wait for and marry him when he is free. Prison life regenerates him and he emerges upon a happy, serene, and more humble life in a village with his wife, surrounded by others, e. g. his judge, who also has resigned to lead the humble life of a schoolmaster.

The merit of the book is the description of the man's growing pathology and of the prison cure. The moral, if it has one, is that the humblest life is best.

The Religious Education of Protestants in an American Commonwealth. By WALTER S. ATHEARN AND OTHERS. New York, George H. Doran & Co., 1923. 580 p.

This is the most comprehensive survey ever made in its field, and its significance lies in the fact that, as the Editors say, conditions in Indiana doubtless prevail to a great extent in other states. It shows the low condition of church edifices, the meager percentage of attendance upon worship and especially Sunday School, the inferior quality of teaching in the religious field, and includes all denominations. The Protestant churches of Indiana have only twenty-four hours of religious instruction a year for their children, and the children who are enrolled are absent every other Sunday. Of, say, four children enrolled in the Sunday School at twelve years old, three drop out before they reach the age of eighteen. There is a great lack of coordination within the denomination and, therefore, a high degree of inefficiency. It is a sad picture, but the methods of arriving at results are so thorough that we have to believe them to be true.

The book is very well gotten up and abounds in charts, tables, diagrams and photographs. Its findings should be known to everyone interested in the present status, tendencies and prospects of religious training in all its aspects.

America Faces the Future. By DURANT DRAKE. New York, The Chautauqua Press, 1923. 339 p.

This book considers what our priceless heritage of American ideals actually is, and how far we are faithful to it. There is constant danger of sectionalism, class rifts, the selfishness of the fortunate, the bitterness of the unfortunate, the cynicism of the sophisticated, and the complacency of the prosperous. We do not want to rubber-stamp our fellows, but we do want to produce a common devotion to the dreams that made our nation great. So, the book is divided into five parts, each of which describes one of our fundamental and national ideals,—viz., liberty, equality, democracy, efficiency and patriotism. To each of these topics five or six chapters are devoted, twenty-nine in all, and there is a list of references at the end of each chapter.

This is one of a set of Chautauqua books, which constitute perhaps the best of the home reading service of this institution. The other books are *Women Professional Workers*, by E. K. Adams; *Chile and Argentina*, by F. G. Carpenter; *The Party Battles of the Jackson Period*, by C. G. Bowers; and, perhaps best of all, *A Short History of American Literature*, with four editors, beginning with the Colonial and Knickerbocker writers, and continuing with successive chapters on—Poe; transcendentalists; poets, essayists and romancers; Lincoln; Whitman; the new nation; the short story; historians and scholars; preachers and philosophers; the English language.

Origin and Evolution of Religion. By E. Washburn Hopkins. New Haven, Yale University Press, 1923. 370 p.

This is a topic to which its learned author has devoted years of work, and in which he has brought himself to the broadest and most sympathetic point of view. With great erudition and wise selection from copious material at hand, he discusses the worship of stones, hills, trees, plants, animals, elements, heavenly phenomena, the sun, of man, and of ancestors. Later chapters are devoted to the religious stimuli, the soul, the self, sacrifice, the ritual, the priest and the church, religion and myth, ethics, philosophy; the triad; the Hindoo, Buddhistic and Christian Trinity; with a final chapter on the reality of religion, which, of course, he affirms and finds at the bottom of all these phenomena.

Law and Freedom in the School. By George A. Coe. University of Chicago Press, 1924. 133 p.

This is a vigorous and original first book by its author. Law is not so much a subject matter to be studied as a dynamic factor in project situations, and as an actual or possible control therein. It is written under the conviction that the project method has come into education, and has been coming in for more than a century, to stay and to grow till it dominates schools of all grades. Education through rationally projected activities of children is antithetical to the common ways of adults. In progressive civilization the school should be the head of society and a critique upon current modes of life. Those who teach as if there were no strain between children and adult ways convict themselves of misrepresenting the educational process. We teachers should think of ourselves as servants bound to do the will of our masters, and these are not the School Board, for they are only fellow servants. The master of the schoolmaster is the better or rational self of society, whose property it is always to judge actual society, and always to point the way for improvement. This is a sound note and rings through the book.

Man and the New Democracy. By William A. McKeever. New York, George H. Doran & Co., 1919. 250 p.

The author is one of the most active and useful men in the advancement of what may be called practical American culture. While he does not speak as a highly trained specialist, he is well oriented in the literature of his wide field, and, above all, is inspired by practical common sense. While all the twenty-four chapters in this book are interesting, the one on religion is one that should be read by everybody. The author is so catholic that he can worship with the devotees of any creed, and finds uplift and positive impulsion in them all. He has been a great pioneer in many kinds of social reform—clean-up work, and so forth—but, while he has lectured and written a good deal, his strongest point is the service he has actually done as a practical reformer, going from place to place and personally instigating and superintending much of the work.

Personality and Social Adjustment. By Ernest K. Groves. New York, Longmans Green & Co., 1923. 296 p.

We certainly need all the help science can give to deal with behavior problems as society becomes more and more complex. This book is the product of experience in working out conduct problems, has good supplementary references, and in its eighteen chapters deals with such subjects as social control; instincts and the complex; habit and social complexity; emotional bases of social conduct; social significance of fear, anger, sex,

gregariousness; self-assertion in family life and in society; emotional maturing of boy and girl; authority and individuality, and so forth. Each chapter is followed by topics for discussion and also for reports. It would be easy to find fault with the author's choice of references, while we think his scope of reading in English only, too limited. It would have been much better in our opinion to have included a few of the best works on these subjects in French and German. We would have thought, too, in such a book, that more space given to individual cases would have been better; but it is a good, timely, and useful book as it is.

Psychology and Primitive Culture. By F. C. BARTLETT. New York, Macmillan Co., 1923. 294 p.

Here is a psychologist who has had the hardihood to step out of the limited field of tests and laboratory procedure into the wide field of anthropology, and compare the methods. He boldly assumes that the psychological study of primitive culture forms the best introduction to the psychology of contemporary social life. This is the keynote of his book, in which he treats the fundamental forms of man's social reactions, the psychology and the folk story, the conflict of tendencies and their mutual reinforcement, the psychology of the contacts of peoples, the factors in the transmission of culture by borrowing, the psychological factors in the diffusion of culture, especially the vices in the elaboration and simplification of culture, and the intensive study of the special groups.

Youth and the Race. Edited by SIR JAMES MARCHANT. New York, E. P. Dutton & Co., 1923. 378 p.

This is the Fourth Report of the Chief Evidence taken by the National Birthrate Commission, and is concerned with the development and education of young citizens for worthy parenthood. It consists largely of evidence of men prominent in the community, and also of experts on the various methods of educating boys and girls in sex hygiene, and the extent to which worthy ideals of citizenship and parenthood can and should be inculcated by education in its widest sense. It covers wide ground—sociological, physiological, religious, statistical, international. One of the best reports is that by Charles E. Pell, author of "The Law of Births and Deaths." It also makes a psychological investigation of the durability of cinema impressions on school children, the measurements of fatigue by cinema instruction, the carrying out of comparative tests of education, of cinema as compared with other methods, and various other cinema questions. It is really a study of adolescence, moral education, the kind of teacher, and the social responsibilities for this age. The Report suggests that contraceptive methods have a little, but not much, to do with the decline in the birthrate, e.g., either in France or in the higher classes in other countries. Apparently, too, their habitual use lessens the chance of fertility later. There is also an optimal point of nutrition which, if it is surpassed, lowers the birthrate.

Experiments in Psychology. By WILLIAM S. FOSTER. New York, Henry Holt & Co., 1923. 309 p.

The Professor of Psychology in the University of Minnesota, in a work dedicated to Professor Edward Titchener, here sets forth a method by which a long series of experiments in psychology can be simultaneously performed by large numbers of students. It really serves as a convenient laboratory handbook, and, so far as we can judge, meets a genuine need of instructors in this subject, especially in large institutions where instructors are called upon to deal with ever increasing numbers.

Intelligence Testing, Methods and Results. By RUDOLF PINTNER. New York, Henry Holt & Co., 1923. 406 p.

This manual is very comprehensive, including the histories of the testing methods, the scales, the group tests, and (Part III) the results, applications to the feebleminded, superior children, the soldier, the school child, the college student, delinquent, dependent, the deaf, the blind, the negro, the foreign born, the employee, and, finally, the inheritance of intelligence. Each chapter has references and there is a good index of subjects and names.

The New Psychology and the Teacher. By H. CRICHTON MILLER. New York, Thomas Seltzer & Co., 1922. 225 p.

This admirable little book is written in the profound conviction that psychoanalysis can be a very great aid to the rising generation, and also that the claims of a rigid orthodoxy by Freudians and their exclusion of those who differ from them, are calamities. The book is very properly dedicated to the author's children, and he gives this address in the hope that teachers intent solely on the welfare of the young will take what is good in this field with none of the prejudices that experts encounter and even illustrate. The writer, on certain important points, disagrees with Freud, but also draws freely on Jung and Adler. All earnest teachers should know this little book.

The Claims of the Coming Generation. By SIR JAMES MARCHANT. New York, E. P. Dutton & Co., 1923. 175 p.

This much-advertised book consists of eight addresses given at the seventeenth annual conference on the subject of this volume. They are on the rather conventional topics of:—the right to be well born; the betterment of child life; the value of mental hygiene; sex instruction for the young; moral training for modern girls; training for worthy parenthood; and religious training. The prelates and professors who give these lectures are healthy-minded, earnest well-wishers, and a few of them medical experts, but there is really almost nothing that is practical and new, and some of the lectures seem hardly better than perfunctory performances. It all indicates that British thought in this field is far less specific, practical and scientific than is the case in this country. Well-meant as the book is it will be a disappointment to those who are both interested and informed.

The Unadjusted Girl. By WILLIAM I. THOMAS. Boston, Little Brown & Co., 1923. 261 p.

The foreword by Mrs. E. S. Dummer, and the cases and cures by Miss Van Walters, make perhaps the brightest pages in this book. The pith of it really is the cases outlined. The somewhat systematic and theoretic treatment in the chapters, while it may serve to orient the beginner in the field to label and classify its various departments, really adds very little to our knowledge of this subject. In fact, the time has come when it is the social worker, or those who deal directly with individual cases, who can really make new contributions. It seems as though in this field there was a wide disparity between the facts found in the first-hand observation of life, which are full of interest and suggestive of both ideas and of cures, and the somewhat stereotyped ideology that has grown up, which the author—rather to the disappointment of those who know his long interest in this field—does not quite bridge as he might fairly be expected to do. Perhaps the time has not yet come to write conclusively or even incisively on this complicated subject. Certainly one who has

little knowledge or use for Freud can hardly contribute what the world wants here.

The Life and Letters of Joel Chandler Harris. By JULIA COLLIER HARRIS. Boston, Houghton Mifflin & Co., 1918. 620 p.

This delightful volume is a very lucid pen-picture by his daughter-in-law of one of the most genial and loved of all American writers. It gives not only the story of his simple life, but of the origin of his character of Uncle Remus, which, we are told, was a composite of several darkies the author knew. So modest was he that he never ceased to be surprised at the sudden and wide fame his work achieved. No one ever did ampler justice to the humor, the high-charged religiosity, the buoyancy and genuine creativeness of the negro mind. Most of these songs, poems, and stories, having been once read, can never possibly fade, at least in substance, from the memory of those who have read them. The negroes certainly never had a better friend or a more truthful expositor, and, perhaps we might even add, a warmer admirer than Joel Chandler Harris.

Twenty-five Years of American Education. By I. L. KANDEL. New York, Macmillan Co., 1924. 469 p.

Dr. Paul Monroe, to whom this book is dedicated, has for a quarter of a century done most useful educational work, and here we have sixteen papers by as many different writers which altogether constitute a valuable addition to our knowledge of the history of education. There are chapters on university study of education; tendencies in educational philosophy; education; psychology; tests and measurements; development of method; public school administration; finance; elementary, secondary and vocational education; exceptional children; education of women; education in the south, in Porto Rico, and of the negro. Psychologists will be most interested in Dr. Leary's story of educational psychology, from the organization of the Herbartian Society to the present position, discussing especially sections on Thorndike, Hall, and the new relations between psychology, philosophy, and methods.

Economic Liberty. By HAROLD COX. London and New York, Longmans Green & Co., 1920. 263 p.

As the author understands economic liberty it means freedom to work and to trade in their broadest sense. After the loss of this country, England built her present Empire upon a reversal of all her previous tariff policy. A point especially stressed is that the State can never begin to deal with all the complexities of social and industrial life. Moreover, it is necessary to leave a wide margin to the individual conscience outside the coercive power of the State. Universal State regulation atrophies conscience and destroys initiative. There must always be left some liberty of wrong-doing in order to develop an active sense of right-doing. Hence, it is better to endure some evils due to lack of regulations rather than to lose the boons liberty brings.

Stories from an Early World. By R. M. FLEMING. New York, Thomas Seltzer & Co., 1923. 162 p.

This most attractively gotten up and illustrated book consists of well-told stories from Egypt, Arabia, Babylonia, American Indians, China, Polynesia, Japan, Greenland, and a dozen other countries, gathered with much wisdom and discretion. There are thirty-six stories from twenty-four

races—mostly ancient but some modern—which show accurate and painstaking studies, as witnessed by the eminent anthropologist, H. J. Fleure.

Studies in Classic American Literature. By D. H. Lawrence. New York, Thomas Seltzer & Co., 1923. 264 p.

This attractive volume contains very interesting studies of Benjamin Franklin, Cooper, Poe, Hawthorne, Dana, Melville, and Walt Whitman. There is indeed here "a new feeling for the old American books." The author attempts to rescue American literature from the swaddling clothes of European culture, and to insist that it is as original, independent, and, above all, as extreme as the Russian. His ambition is nothing less than to be a "midwife to the homunculus of the original American spirit."

Then and Now in Education: 1845–1923. By Otis W. Caldwell and Stuart A. Courtis. Yonkers-on-Hudson, World Book Co., 1924. 400 p.

The authors in the last three-fifths of the book reprint the famous survey report made in Boston in 1845, and compare the standards of attainments therein represented with those of the present day. They seem to think that this shows two things—first, how very sagacious teachers were at the beginning of this seventy-five year period, and, second, how far we have advanced beyond it. To combine these two purposes is a delicate matter. The authors, while duly appreciative of the past, and resolved to go to the limit in recognizing its merits, are nevertheless so whole-heartedly disciples of the new, that it would seem as though some of their laudations of past times might almost have been written with the tongue in the cheek. However, it is a wholesome contribution to educational discussion, and gives the writers a chance to ventilate the very newest methods of surveys, gradations, and standardizations of various kinds.

Cures. By James J. Walsh. New York, D. Appleton & Co., 1923. 291 p.

This is an extraordinary book, which is as witty as it is wise and learned. Its sixteen chapters describe among other things, personal healers; drug cures; cures with a punch, and magnets; Mesmer; Perkins and his tractors; distance cures; A. J. Davis; hypnotism; appliances; manipulation; mystical cures; psychoanalysis and Coué; and so forth. It will pain psychoanalysts to find Freud bracketed with Coué as a representative of a passing fad, but the author has evidently read wisely and diligently on all the topics he treats, including this, and what is better yet, he states sympathetically all that can be said in favor of each cure, however ridiculous. It would almost seem as though there is nothing in the mineral, vegetable, or animal kingdom that has not wrought real cures when it was believed in intensely enough. The efficacy of all, however, vanishes when belief weakens.

An Introduction to Psychology. By Susan S. Brierly. New York, Dodd Mead & Co., 2nd edition, 1923. 152 p.

This book is written to meet the needs of non-professional students. The beginner is introduced to certain main lines of thought based upon a biological approach to psychology, and from this point of view the theory of psychoanalysis is brought into relation with normal psychology and with experimental behaviorism.

Social Psychology. By ROBERT H. GAULT. New York, Henry Holt & Co., 1923. 336 p.

For a text-book, this is surprisingly new, covering as it does a vast range of highly suggestive topics—the sense of social unity, social motives, intellectual levels and psychic stability of the population, the racial factor, suggestion, the crowd and mob, social progress, adjustment and maladjustment, potentiality for development of civilization, with an appendix on the Alpha and Beta tests with exercises and references. We cannot in the space at our disposal do justice to this book, but it ought to be serviceable, not only as a text, but to the general reader.

Psychology for Students of Education. By ARTHUR I. GATES. New York, Macmillan Co., 1923. 489 p.

The author here gives little space to the sensory processes, theories of vision, audition, and so on, includes some introspective analysis for the sake of its terminology, and gives much space to the mechanics and dynamics of human nature, including the receiving, connecting and reacting mechanisms. He also has chapters on conscious states and processes, on instinctive activities, the emotions, the dynamics of instinct, laws of learning, and cortical functions, economy in learning, acquisition of percepts and ideas, reasoning and problem setting transformed, training individual differences, intelligence, and measurements of traits.

Language, Its Nature, Development and Origin. By OTTO JESPERSON. New York, Henry Holt & Co., 1923. 448 p.

After giving a history of philology, the second circa hundred pages in this book are devoted to the child, who, the author concludes, has had considerable influence in the development of language, although he does not tell us whether children have invented words (a much mooted question in psychogenesis). Children, however, have had great influence on the form of words, and some upon syntax. The discussion in this part will chiefly interest teachers.

Book III, the Individual and the World, is more general; the influence of the foreigner, woman, and of change, are stressed. The last book, on the development of language, discusses the etymology, decay, progress, sound symbolism, origin of grammatical elements and of speech.

The Coming of Man. By JOHN M. TYLER. Boston, Marshall Jones Co., 1923. 147 p.

This is the third book by this master of condensation, a biologist who is a psychologist, and also a Christian. It is just the book for these times of controversy. It tells concisely the story of life from the amoeba to civilized man, with chapters on the origin of life, the backbone, land life, savage man, civilization, and personality. The author also discusses the logic of evolution, nature and man, his environment, the survival of the fittest, and, finally, perfect health of body and mind. There is a good index and a well-chosen seven-page bibliography. The author is an excellent illustration of the mental sanity for which he pleads.

The Birth and Growth of Religion. By GEORGE FOOT MOORE. New York. Charles Scribner's Sons, 1923. 178 p.

This accomplished scholar has wrought for years on religious origins, and here sets forth in eight lectures to Union Theological Seminary the chief results of his studies. His story is told so briefly and in such very simple language, as if addressed to those who know nothing whatever of

his subject, that the scholar will find here little that is new, except certain judicious perspectives which only one very learned in this field could give aright. Despite his liberality, the author is a little chary in giving credit to earlier religions for *motifs* which became later components of Christianity, and he is rather more intent upon showing us clearly the limitations within the excellencies of these old faiths. A final chapter on what Christianity owes to them would not have been out of place.

My Disillusionment in Russia. By EMMA GOLDMAN. New York, Doubleday Page & Co., 1923. 242 p.

This really accomplished and brainy anarchist, after her deportation from this country, studied the Soviet system, its characteristic energy and independence, and found it wanting. She deemed it even treason to the Revolution which preceded it. Her facility with Russian, which we believe was her mother tongue, and the unusual freedom extended to her by the Bolsheviki, enabled her to come into first-hand contact with high officials from Lenin down to many peasants and working people, men and women. While she professes to remain true to her original anarchist principles, no one known to this writer has brought forward such a scathing indictment so well based on facts of the actual working of the Bolsheviki system.

The Child's Mind and the Common Branches. By DANIEL WOLFORD LA RUE. New York, Macmillan Co., 1924. 483 p.

The keynote of this book is the word "bonds," which it is the business of education to develop. The brain is an instrument for their formation, and we are given a scheme for the formation of any set of bonds, which is illustrated by diagrams. This thesis being established, the author applies it to a dozen or more of the school topics, *seriatim*. At the close of the more important chapters there are class exercises, hints for further study, and references.

Coué for Children. By GERTRUDE MAYO. New York, Dodd Mead & Co., 1923. 126 p.

Mlle. Kaufmant, ten years ago, came to Coué as a patient, was cured, and then devoted herself to applying the system to children, and this book describes her work. She believes that even infants who are not happy are subjects of repressions that lay the seeds of disease, and that by stroking, patting, and judiciously encouraging even babes in arms, their development and immunity from disease can be increased. But she describes here especially the methods used with older children, with many concrete illustrations, which show the hitherto unprecedented power of imagination on the health conditions of children.

Children's Stories and How to Tell Them. By WOUTRINA A. BONE. London, Christophers Sons. 123 p.

The first three-fifths of this book are taken up with origins, e.g. the making of the gods, folk and early lore, the place of stories in the child's mind, the technique of story telling, verses, plays and mime, and there are five original stories. The author stresses folk lore, myth and fairy tales, as well as historical and social setting. The bibliography is extensive, but by no means excessive on these latter subjects.

The Triumph of Unarmed Forces (1914–1918). By Rear-Admiral Consett. London, Williams & Norgate, 1923. 344 p.

The author of this book does not consider the causes of the Great War, but rather the causes of its undue prolongation. Germany was not ready for a long war and it was not self-supporting. It was a struggle for the mastery of supplies, and this economic struggle was not foreseen—indeed it was unsuspected by the majority of Englishmen—nor was the starving of Germany by the British blockade. The prestige of England was never so high as at the outbreak of the war, and the prevention of supplies from reaching Germany, which the author advocated, was really carried out only after the war had been in progress some two and a half years. The Navy was enchained, as the author shows in Part I. The second part is devoted to treating with the enemy.

Parties and Party Leaders. By Anson Daniel Morse. Boston, Marshall Jones Co., 1923. 267 p.

The author, who was for many years a professor of history in Amherst College, wrote these fourteen essays at various times, and they have now most happily been gathered into a volume where they are accessible and altogether make a real contribution of high value. Mr. Dwight Whitney Morrow has contributed an introduction of some thirty-five pages, giving a brief life of the professor, and epitomizing some of the chief contributions found in the papers themselves. We have no space to do justice to such a work in this journal, and it must suffice to say that we have here a volume which should be in the library of every student and teacher of American history.

Towards International Justice. By F. N. Keen. London, George Allen and Unwin, Ltd., 1923. 249 p.

To the present writer these essays give the clearest and sanest picture of the League, including the Council and the Court, that has ever fallen under his notice. The author would have every nation included in the League, and thinks that until this is done all its work will be more or less tentative and half-hearted. He pleads, too, for an active, organized co-operation by all kinds of voluntary societies to strengthen public opinion, which gives the League all its real authority. He would have each nation have a permanent representative at Geneva for quick action in emergencies, and rightly urges that until these three major modifications are made the fear of war can never be removed.

The Psychology of Insanity. By Bernard Hart. London, Cambridge University Press. Reprinted, 1922. 176 p.

This little primer on the great subject, printed first in 1912 and reprinted almost every year since then without substantial change, is still, from many points of view, the best introduction to the subject for the general reader, dealing briefly with the history, concept and phenomena of insanity, with complexes, conflicts, repressions and so forth, with a selected bibliography and brief index.

Post Mortem. By C. MacLaurin. New York, George H. Doran Co., 1923. 255 p.

This medical man writing on historical topics and personages will impress most as a Daniel come to judgment. Anne Boleyn was a nymphomaniac; Jeanne d'Arc was a prepubescent who, instead of menstruating, had visions; Charles V., the greatest man between Charlemagne and

Napoleon, lost his health from gluttony and hardening of the arteries, and resigned when he should have carried on for a long time; Philip II had several very painful diseases culminating in malignant tumor, and but for the peculiar illness of himself and his father Holland might never have been persecuted or become free; Pepys' life was colored by over-eating, under-exercise and stone; Gibbon's hydrocele, Marat's dementia, Napoleon's peculiar physical conditions which determined his whole career—and so on for the rest of the round dozen he describes. All is done, however, in a fascinating and even captivating style, with amazing knowledge and even yet more amazing assurance.

American Nights Entertainment. By GRANT OVERTON. New York, D. Appleton & Co., 1923. 414 p.

This book is written in a light, clever, gossipy, but on the whole attractive style, on Galsworthy, Conrad, Arthur Train, Mrs. Sackville West, D. B. Wright, Tarkington, D.O. Stewart, J. C. Lincoln, Edith Wharton, Christopher Morley, of all of whom portraits are pasted in. There is slighter reference to many others with lists and dates of publications of the authors treated, and all the more important critical verdicts about them. The appositeness of the title of the book is not obvious. The attitude of the author towards all his favorites is almost that of unstinted praise, with practically nothing in the way of negative criticism. There are many who will be richly informed by this book, and many more who will be interested in it.

A Book of Burlesques. By H. L. MENCKEN. New York, Alfred D. Knopf (Revised Edition), 1921. 239 p.

These satires and extravagances are as much a part of the author's criticism as are his more serious discussions of men and books. There is the same war against hypocrisy, affectation and Philistinism, with a number of characteristic epigrams. We doubt if these fragments add much to the author's reputation. The articles on death, a wedding, the visionary, the artist, seeing the world, memoirs of the devil, asepsis, the Jazz Webster, and the other shorter ones, give by their titles no hint of the content, and indicate that the author is growing whimsical and, we fear we must add, conceited, or he would hardly deem these scraps worthy of publication.

The Living God. ANONYMOUS: "What matters who wrote it." New York, G. P. Putnam's Sons, 1923. 86 p.

This little book is written in a nondescript kind of blank verse. Book I, entitled "Life," begins with matter, and in twenty captions leads us to life. Book II, "Man," and Book III, "God," have each ten topics. "Man in the image of man is the God of man." "From image to image unfolds his vision, from God to God he grows." Throughout the eternal vastness no dross survives. The mate of man abides in the living God.

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